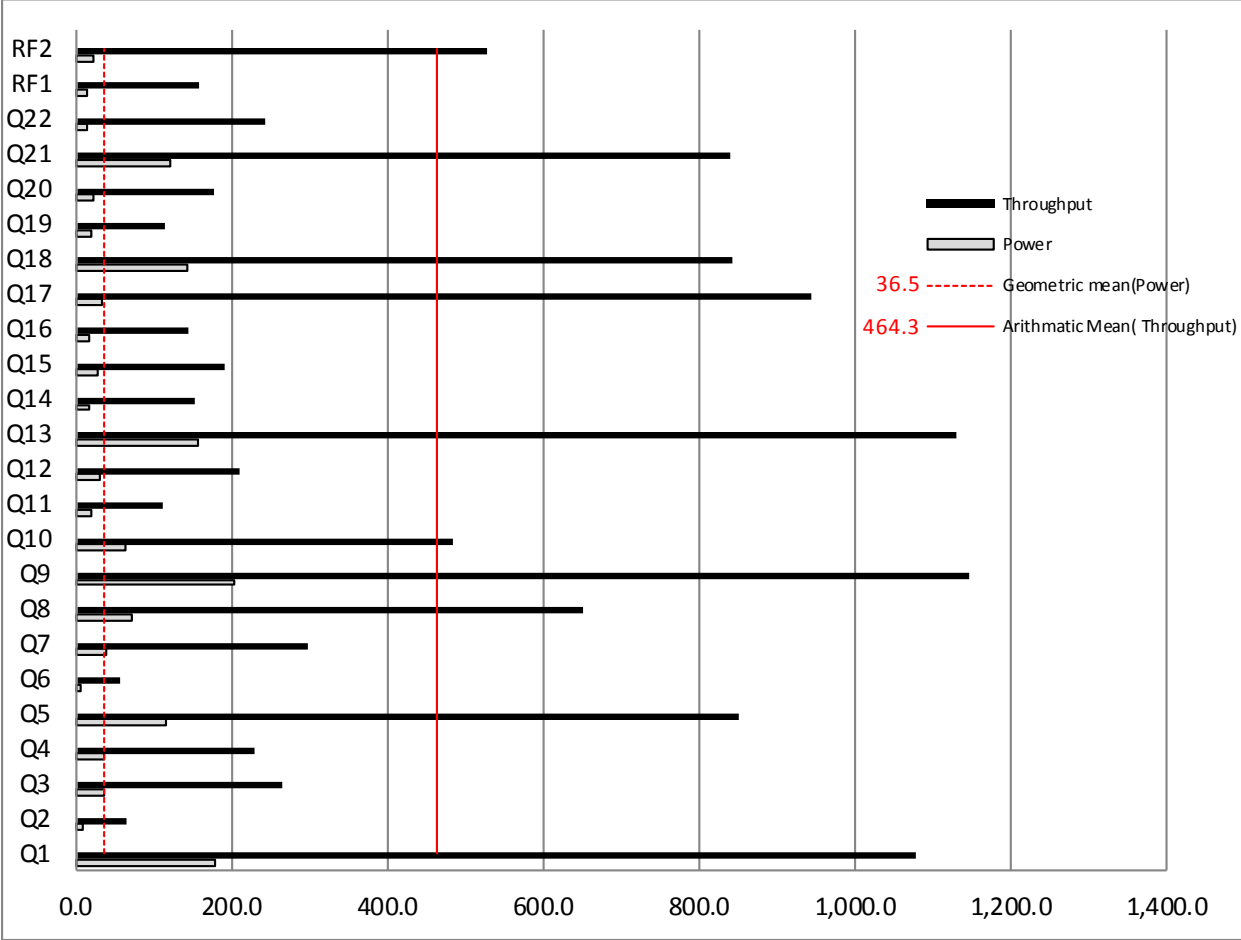


		Cisco UCS C420 M3 Server		TPC-H Rev. 2.16.0 TPC-Pricing Rev. 1.7.0	
				Report Date: October 17, 2013	
Total System Cost		Composite Query per Hour Metric		Price / Performance	
\$299,680 USD		233,219.6 QphH@3000GB		\$1.29 USD \$ / QphH@3000GB	
Database Size	Database Manager	Operating System		Other Software	Availability Date
3000GB	Sybase IQ Version 16.0 SP02	Red Hat Enterprise Linux Server Release 6.4			December 30, 2013



Throughput
 Power
 36.5 ----- Geometric mean(Power)
 464.3 ----- Arithmetic Mean(Throughput)

Database Load Time = 2h 24m 26s		Storage Redundancy Level	
Load Includes Backup: N		Base Tables and Auxiliary Data Structures	1
Total Data Storage / Database Size = 4.53		DBMS Temporary Space	0
Percentage Memory / Database Size = 33.3%		OS and DBMS Software	1

System Configuration:		Cisco UCS C420 M3 Server
Processors/Cores/Threads/Model:		4/32/64 Intel Xeon E5-4650 Processor (2.7 GHz, 20MB cache, 130W)
Memory:		1024 GB
Storage:		8 x 600GB 6Gb SAS 10K RPM SFF HDD
		8 x Cisco UCS 200 GB SATA 2.5" Enterprise Performance SSD
Table Storage:		6 x Cisco UCS Fusion ioDrive2 1205M Adapter
		13.6 TB

Cisco	Cisco UCS C430 M3 Server				TPC-H Rev. 2.16.0 TPC-Pricing Rev. 1.7.0			
					Report Date:	17-Oct-2013		
Description	Part Number	Brand	Source	Unit Price	Qty	Extended Price	3 Year Maint. Price	
Server Hardware and OS								
UCS C420 M3 w/o CPU mem HDD PCIe PSU rail kit	UCSC-C420-M3	Cisco	1	7,500.00	1	\$7,500		
SMARTNET 24X7X4 UCS C420 M3 Server, 36 Month(s)	CON-SNTP-C420M3	Cisco	1	2,349.00	1	\$2,349		\$2,349
2.70 GHz E5-4650 130W 8C/20MB Cache/DDR3 1600MHz	UCS-CPU-E5-4650	Cisco	1	10,255.00	4	\$41,020		
32GB DDR3-1600-MHz LR DIMM/PC3-12800/quad rank/x4/1.35v	UCS-ML-1X324RY-A	Cisco	1	2,639.00	32	\$84,448		
600GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted	A03-D600GA2	Cisco	1	1,086.00	8	\$8,688		
200GB 2.5 SATA Enterprise performance SSD	UCS-SD200G0KA2-E	Cisco	1	4,400.00	8	\$35,200		
Cisco UCS 1205GB MLC Fusion ioDrive2	UCSC-F-FIO-1205M	Cisco	1	37,500.00	6	\$225,000		
AC Power Cord - 250V 10A - PRC	CAB-250V-10A-CN	Cisco	1	0.00	2	\$0		
1200W 2u Power Supply For UCS	UCSC-PSU2-1200	Cisco	1	652.00	2	\$1,304		
MegaRAID 9271CV with 8 internal SAS/SATA ports with Supercap	UCS-RAID9271CV-8I	Cisco	1	1,686.00	2	\$3,372		
SAS/SATA cable (long) for C420 M3	UCSC-CABLE-L	Cisco	1	Included	2			
SAS/SATA cable (short) for C420 M3	UCSC-CABLE-S	Cisco	1	Included	2			
Heatsink for the C420 M3	UCSC-HS-C420M3	Cisco	1	Included	4			
Full height PCIe filler for C-Series	UCSC-PCIF-01F	Cisco	1	Included	2			
Half height PCIe filler for UCS	UCSC-PCIF-01H	Cisco	1	Included	3			
2U Rail Kit for UCS C-Series servers	UCSC-RAIL-2U	Cisco	1	Included	1			
RHEL/4 Socket/1 Guest/3Yr Svcs Required	RHEL-4S-1G-3A	Cisco	1	Included	1			
ISV 24X7 Rhel/4 Socket/1 Guest 36 Month(s)	CON-ISV1-RH4S1G3A	Cisco	1	9,588.00	1			\$9,588
8 Drive Backplane For C-Series	UCSC-DBKP-08D	Cisco	1	313.00	2	\$626		
IOGEAR GKM502 Compact Wired Keyboard and Mouse Combo	GKM502	Provantage	3	\$11	1	\$11		
Acer 17" V173 DJOB LCD Monitor 1280X1024	UM.BV3AA.D01	Provantage	3	\$112	1	\$112		
Cisco R42610 expansion rack	RACK-UCS	Cisco	1	\$2,857	1	\$2,857		
						Subtotal	\$412,487	\$11,937
Large Purchase Discount ⁱ	57.0%	Cisco	1				-\$235,117	-\$6,804
						Hardware Subtotal	\$177,369	\$5,133
Software								
Sybase IQ Single App Svr, per cpu core	13545	SAP	2	\$2,595	32	\$83,040		
3 yr support Single App Svr, per cpu core	98480	SAP	2	\$1,713	32			\$54,816
Sybase IQ Software Support (15% of Net)	NA	SAP	2				-\$12,456	-\$8,222
						Software	\$70,584	\$46,594
						Total	\$247,953	\$51,727
Pricing: 1=Cisco 2=SAP 3=Provantage;				Three-Year Cost of Ownership: \$299,680 USD				
Audited by Francois Raab from InfoSizing, Inc. (sizing.com)				QphH: 233,219.6				
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: \$1.29 USD				
Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmark specifications. If you find that the stated prices are not available according to these terms, please inform at pricing@tpc.org. Thank you.								

Cisco	Cisco UCS C420 M3 Server	TPC-H Rev. 2.16.0			
		TPC-Pricing Rev. 1.7.0			
		October 17, 2013			
Measurement Results					
Database Scaling (SF/Size)		3,000			
Total Data Storage/Database Size		4.53			
Percentage Memory/Database Size		33.3			
Start of Database Load Time		10/02/2013	11:00:08		
End of Database Load Time		10/02/2013	13:24:34		
Database Load Time		02:24:26			
Query Streams for Throughput Test (S)		8			
TPC-H Power		295,707.5			
TPC-H Throughput		183,936.5			
TPC-H Composite		233,219.6			
Total System Price Over 3 Years		\$299,680			
TPC-H Price/Performance Metric (\$/QphH@3000GB)		\$1.29			
Measurement Interval					
Measurement Interval in Throughput Test (Ts)		10,334			
Duration of throughput stream execution:					
Power Run	Seed	Query Start Time Query End Time	Duration (sec)	RF1 Start Time RF1 End Time	RF2 Start Time RF2 End Time
	1002132434	10/02//2013 13:24:54 10/02//2013 13:47:50	1,375	10/02/2013 13:24:35 10/02/2013 13:24:49	10/02/2013 13:47:50 10/02/2013 13:48:11
Stream	Seed	Query Start Time Query End Time	Duration (sec)	RF1 Start Time RF1 End Time	RF2 Start Time RF2 End Time
1	1002132435	10/02/2013 13:48:11 10/02/2013 16:40:25	10,333	10/02/2013 13:49:11 10/02/2013 13:54:29	10/02/2013 13:54:30 10/02/2013 13:58:23
2	1002132436	10/02/2013 13:48:11 10/02/2013 16:34:26	9,974	10/02/2013 13:58:23 10/02/2013 14:01:07	10/02/2013 14:01:07 10/02/2013 14:12:18
3	1002132437	10/02/2013 13:48:11 10/02/2013 16:38:30	10,218	10/02/2013 14:12:18 10/02/2013 14:14:07	10/02/2013 14:14:07 10/02/2013 14:25:32
4	1002132438	10/02/2013 13:48:11 10/02/2013 16:39:55	10,303	10/02/2013 14:25:32 10/02/2013 14:28:28	10/02/2013 14:28:28 10/02/2013 14:34:21
5	1002132439	10/02/2013 13:48:11 10/02/2013 16:39:53	10,301	10/02/2013 14:34:22 10/02/2013 14:36:40	10/02/2013 14:36:41 10/02/2013 14:46:52
6	1002132440	10/02/2013 13:48:11 10/02/2013 16:39:05	10,253	10/02/2013 14:46:53 10/02/2013 14:48:43	10/02/2013 14:48:43 10/02/2013 15:06:12
7	1002132441	10/02/2013 13:48:11 10/02/2013 16:39:31	10,279	10/02/2013 15:06:12 10/02/2013 15:08:26	10/02/2013 15:08:26 10/02/2013 15:12:39
8	1002132442	10/02/2013 13:48:11 10/02/2013 16:35:44	10,052	10/02/2013 15:12:39 10/02/2013 15:14:38	10/02/2013 15:14:39 10/02/2013 15:20:47

Cisco	Cisco UCS C420 M3 Server									TPC-H Rev. 2.16.0 TPC-Pricing Rev. 1.7.0		
										October 17, 2013		
	TPC-H Timing Intervals (in seconds)											
Duration of stream execution:												
Stream ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
0	179.0	9.1	35.2	36.7	115.0	5.3	37.9	72.1	203.3	63.9	19.2	30.0
1	948.5	45.0	252.0	35.5	906.3	36.8	318.2	581.4	1,139.8	419.0	70.3	170.1
2	1,155.4	50.4	300.0	269.3	1,043.6	101.1	256.8	608.5	1,144.6	486.4	85.4	221.5
3	1,170.3	75.8	204.1	239.2	761.2	53.6	292.0	708.4	1,203.3	377.0	111.3	178.3
4	1,166.9	86.1	198.4	225.7	852.1	56.7	334.7	639.1	1,254.3	516.1	157.2	255.1
5	1,039.1	52.8	230.1	235.5	909.2	49.9	327.2	613.2	910.8	471.0	118.7	247.8
6	1,063.8	55.2	322.1	274.9	876.1	53.7	385.3	665.1	1,056.2	622.9	120.7	234.7
7	1,018.2	84.0	277.9	218.5	683.3	46.4	278.8	721.3	1,232.1	554.4	98.8	111.6
8	1,059.7	55.1	322.7	340.0	787.8	59.8	193.0	665.3	1,229.1	412.6	114.7	260.1
Minimum	948.5	45.0	198.4	35.5	683.3	36.8	193.0	581.4	910.8	377.0	70.3	111.6
Maximum	1,170.3	86.1	322.7	340.0	1,043.6	101.1	385.3	721.3	1,254.3	622.9	157.2	260.1
Average	1,077.7	63.1	263.4	229.8	852.5	57.3	298.3	650.3	1,146.3	482.4	109.6	209.9
Stream ID	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
0	155.7	17.3	26.2	17.0	33.2	143.3	19.4	20.9	120.9	14.4	14.3	21.0
1	1,256.5	202.0	243.1	97.0	1,037.2	859.7	144.8	198.8	1,055.4	316.3	318.0	233.1
2	973.3	210.4	132.3	149.7	792.6	638.9	95.4	183.1	843.7	232.4	163.8	670.5
3	1,071.3	116.7	174.4	170.5	1,083.2	771.1	102.1	218.0	913.8	223.2	108.2	684.9
4	1,116.5	147.5	295.2	173.3	898.0	710.7	92.3	75.1	779.2	273.9	175.7	353.2
5	1,328.2	143.3	228.5	116.2	923.6	989.7	124.7	199.0	789.1	253.6	138.7	611.8
6	1,203.7	164.3	206.5	172.2	895.7	922.7	80.7	153.6	585.8	137.3	110.1	1,048.4
7	1,170.6	103.3	114.6	134.9	936.7	985.1	120.1	154.4	1,011.2	223.6	134.2	252.8
8	918.0	129.0	121.8	130.6	988.2	874.9	142.0	227.9	737.9	282.5	119.4	368.2
Minimum	918.0	103.3	114.6	97.0	792.6	638.9	80.7	75.1	585.8	137.3	108.2	233.1
Maximum	1,328.2	210.4	295.2	173.3	1,083.2	989.7	144.8	227.9	1,055.4	316.3	318.0	1,048.4
Average	1,129.8	152.1	189.6	143.1	944.4	844.1	112.8	176.2	839.5	242.9	158.5	527.9