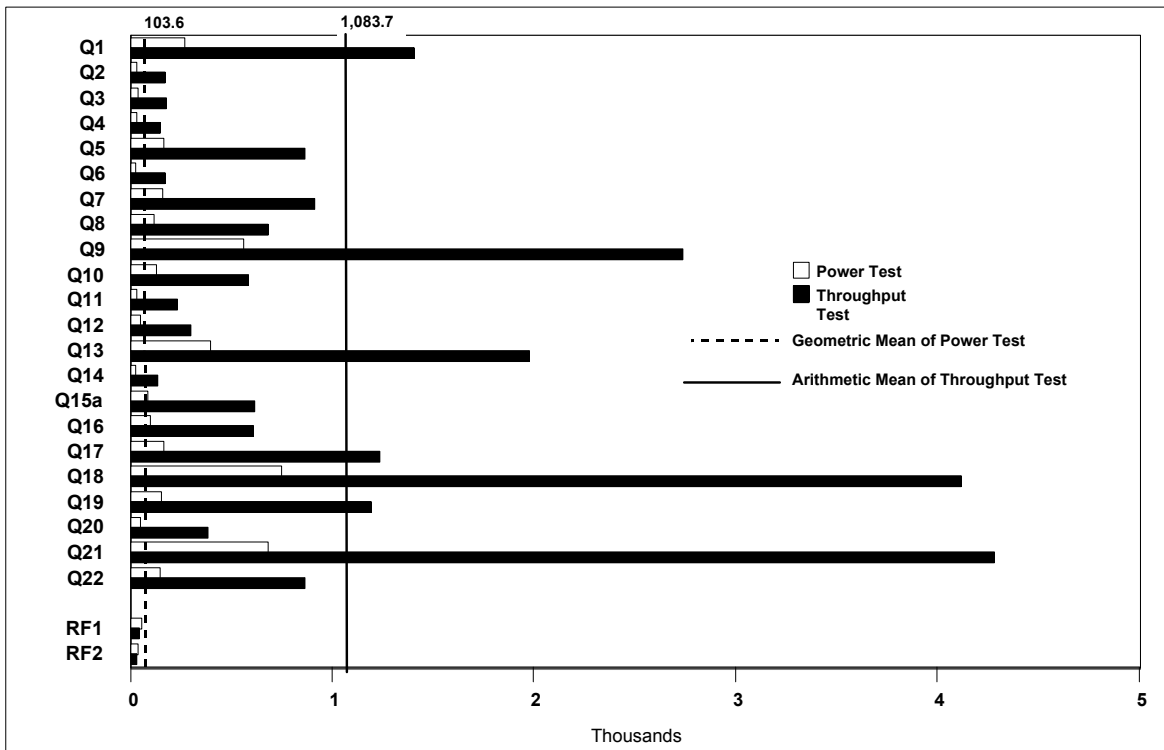


IBM® @server® xSeries® 366
with
IBM DB2® UDB 8.2

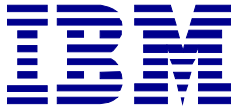
TPC-H Rev 2.1.0

Report Date: April 8, 2005

Total System Cost		Composite Query-per-Hour Metric		Price/Performance
\$255,702 USD		7762.2 QphH @ 300GB		\$33 USD per QphH @ 300GB
Database Size	Database Manager	Operating System	Other Software	Availability Date
300GB	IBM DB2 UDB 8.2	SUSE® Linux® Enterprise Server 9	None	May 2, 2005



Database Load Time: 04:05:00		Load Included Backup: Y	Total Data Storage / Database Size: 18.53
RAID (Base Tables Only): N		RAID (Base Tables and Auxiliary Data Structures): N	RAID (All): N
Configuration			
Processors/Cores/Threads	4/4/8	Intel Xeon Processor MP 3.6GHz / 1MB ECC L2 Cache	
Memory	8	2 x 2GB PC2-3200 ECC DDR2 SDRAM RDIMM Kits	
Disk Controllers	6	ServeRAID-6M Ultra320 SCSI Adapter	
Disk Drives	160	36.4GB 15K Ultra320 SCSI Drive	
	4	36.4GB 15K Ultra320 SCSI Drive	
Total Disk Storage		5559.6GB	

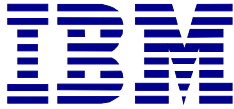


**IBM @server xSeries 366
with IBM DB2 UDB 8.2**

TPC-H 2.1.0 Executive Summary

Report Date: April 8, 2005

Description	Part Number	Third Party		Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
		Brand	Pricing				
Server Hardware							
IBM eServer xSeries 366	8863-2RU	IBM	1	9,999	1	9,999	
w/1 x 3.6GHz/1MB L2 Cache Xeon Processor MP							
w/2 x 1GB ECC SDRAM RDIMMs							
Integrated Dual-Channel Gigabit Ethernet							
xSeries 3.6GHz/1MB L2 Cache Xeon Processor MP	13N0695	IBM	1	1,999	3	5,997	
4GB (2x2GB) PC2-3200 DDR2 ECC SDRAM RDIMM	73P2867	IBM	1	2,339	8	18,712	
Active Memory™ Memory Expansion Card	13M7409	IBM	1	499	3	1,497	
ServeRAID-6M Ultra320 SCSI Contoller	32P0033	IBM	1	999	6	5,994	
IBM Preferred Pro Full-Size Keyboard	31P7415	IBM	1	29	1	29	
IBM Sleek 2-Button Mouse	28L3673	IBM	1	15	1	15	
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	1	139	1	139	
ServicePac for 3-Year 24x7x4 Support (x366)	96P2253	IBM	1	900	1		900
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM	1	90	1		90
					Subtotal	42,382	990
Server Storage							
IBM EXP400 Rack Storage Exp. Enclosure	17331RU	IBM	1	3,099	12	37,188	
36.4GB 15K Ultra320 SCSI Hot-Swap Drive	90P1318	IBM	1	349	164	57,236	
Netfinity 2M Ultra2 SCSI Cable	03K9310	IBM	1	75	12	900	
NetBAY4SX Rack	93074SX	IBM	1	1,489	1	1,489	
ServicePac for 3-Year 24x7x4 Support (EXP400)	41L2768	IBM	1	760	12		9,120
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2762	IBM	1	300	1		300
					Subtotal	96,813	9,420
Server Software							
DB2 UDB ESE 8.2 SW Lic. & Maintenance 12 Months		IBM	1	22,260	4	89,040	
SW Maintenance Renewal - 1 Year		IBM	1	1,060	8		8,480
DPF SW License & Maintenance 12 Months		IBM	1	6,686	4	26,744	
DPF SW Maintenance Renewal - 1 Year		IBM	1	318	8		2,544
SUSE Linux Enterprise Server 9 for x86, AMD64, and Intel EM64T 1-16 Processors w.3-Year Upgr. Protection	00662644456140	SUSE	2	2,250	1	2,250	
					Subtotal	118,034	11,024
Volume Discount of 15% on xSeries hardware, 20% on ServicePacs.					Discount	20,879	2,082
Pricing contact: Rick Rudd, 919-486-0818. Hardware List Prices available at ibm.com.					Total	\$236,350	\$19,352
Three-Year Cost of Ownership USD:						\$255,702	
Pricing: 1 - IBM; 2- Novell						QphH@300GB:	7,762.2
Warranty and Maintenance: The standard warranty has been upgraded to 3 years of 24x7x4 coverage.						\$/QphH@300GB:	\$33 USD
Audited by Bradley J. Askins, InfoSizing, Inc.							
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 stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org . Thank you.							



**IBM @server xSeries 366
with
IBM DB2 UDB 8.2**

TPC-H Rev 2.1.0

Report Date: April 8, 2005

Measurement Results:

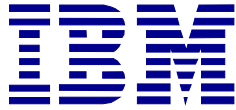
Database Scale Factor	300
Total Data Storage/Database Size	18:53
Start of Database Load	22:59:11
End of Database Load	03:03:26
Database Load Time	4:05
Query Streams for Throughput Test	6
TPC-H Power	10,423.0
TPC-H Throughput	5,780.6
TPC-H Composite Query-per-Hour (QphH@300GB)	7,762.2
Total System Price over 3 Years	\$255,702 USD
TPC-H Price/Performance Metric (\$/QphH@300GB)	\$33 USD

Measurement Interval:

Measurement Interval in Throughput Test (Ts) = 24,662

Duration of Stream Execution:

	Seed	Query Start Date/Time Query End Date/Time	RF1 Start Date/Time RF1 End Date/Time	RF2 Start Date/Time RF2 End Date/Time	Duration
Stream 00	402030326	04/02/05 03:39:46 04/02/05 04:51:12	04/02/05 03:39:46 04/02/05 03:40:41	04/02/05 04:50:34 04/02/05 04:51:12	01:11:26
Stream 01	402030327	04/02/05 04:51:15 04/02/05 11:28:18	04/02/05 04:51:21 04/02/05 11:34:48	04/02/05 11:34:48 04/02/05 11:35:26	06:37:03
Stream 02	402030328	04/02/05 04:51:15 04/02/05 11:29:13	04/02/05 11:35:26 04/02/05 11:36:14	04/02/05 11:36:14 04/02/05 11:36:49	06:37:58
Stream 03	402030329	04/02/05 04:51:15 04/02/05 11:22:57	04/02/05 11:36:49 04/02/05 11:37:36	04/02/05 11:37:36 04/02/05 11:38:10	06:31:42
Stream 04	402030330	04/02/05 04:51:15 04/01/05 11:26:32	04/02/05 11:38:10 04/02/05 11:38:56	04/02/05 11:38:56 04/02/05 11:39:32	06:35:17
Stream 05	402030331	04/02/05 04:51:15 04/02/05 11:33:54	04/02/05 11:39:32 04/02/05 11:40:20	04/02/05 11:40:20 04/02/05 11:40:57	06:42:39
Stream 06	402030332	04/02/05 04:51:15 04/02/05 11:30:38	04/02/05 11:40:57 04/02/05 11:41:44	04/02/05 11:41:44 04/02/05 11:42:17	06:39:23



**IBM @server xSeries 366
with
IBM DB2 UDB 8.2**

TPC-H Rev 2.1.0

Report Date: April 8, 2005

TPC-H Timing Intervals (in seconds):

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Stream 00	269.2	34.7	38.2	31.2	169.2	25.2	161.4	121.0	563.1	129.2	33.5	51.6
Stream 01	1,453.3	161.6	188.7	107.0	898.0	166.6	922.6	634.3	2,613.3	532.2	226.5	316.7
Stream 02	1,320.6	133.5	178.7	120.5	890.0	168.0	813.2	612.2	3,066.6	528.9	205.0	309.4
Stream 03	1,555.4	176.7	171.7	175.0	834.1	148.9	846.6	701.5	2,724.5	569.1	255.5	312.8
Stream 04	1,306.8	218.2	199.4	182.9	738.7	196.5	976.6	766.4	2,837.0	649.5	234.1	331.7
Stream 05	1,291.3	177.8	195.6	159.8	698.4	180.1	1,161.6	660.1	1,973.2	674.3	266.0	280.2
Stream 06	1,551.9	160.8	158.7	139.4	1,153.5	174.1	761.8	722.8	3,236.2	559.3	204.1	257.0
Minimum	1,291.3	133.5	158.7	107.0	698.4	148.9	761.8	612.2	1,973.2	528.9	204.1	257.0
Average	1,410.2	171.4	182.1	147.4	868.8	172.4	913.7	682.9	2,741.8	585.6	231.9	301.3
Maximum	1,555.4	218.2	199.4	182.9	1,153.5	196.5	1,161.6	766.4	3,236.2	674.3	266.0	331.7

Stream ID	Q13	Q14	Q15a	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	397.1	25.7	88.9	101.0	165.4	748.6	153.9	53.7	682.0	148.6	55.0	38.5
Stream 01	2,123.8	107.3	587.4	564.2	1,359.5	4,121.3	1,111.5	391.1	4,347.0	907.2	54.0	38.6
Stream 02	2,049.6	144.8	609.2	630.7	1,280.6	3,932.0	1,251.5	378.3	4,381.2	873.6	47.6	35.6
Stream 03	1,966.9	121.6	668.3	625.4	1,222.0	4,007.2	1,139.9	380.4	3,950.1	948.6	46.3	34.0
Stream 04	1,873.8	158.7	661.2	568.4	1,046.4	3,737.0	1,478.0	367.3	4,435.3	752.9	46.7	36.2
Stream 05	2,187.9	156.7	622.8	718.3	1,402.8	4,603.4	1,101.0	381.9	4,351.5	914.3	47.5	37.2
Stream 06	1,680.0	120.3	567.2	550.9	1,131.8	4,315.2	1,088.9	400.6	4,233.2	795.4	46.6	33.6
Minimum	1,680.0	107.3	567.2	550.9	1,046.4	3,737.0	1,088.9	367.3	3,950.1	752.9	46.3	33.6
Average	1,980.3	134.9	619.4	609.7	1,240.5	4,119.4	1,195.1	383.3	4,283.1	865.3	48.1	35.9
Maximum	2,187.9	158.7	668.3	718.3	1,402.8	4,603.4	1,478.0	400.6	4,435.3	948.6	54.0	38.6