



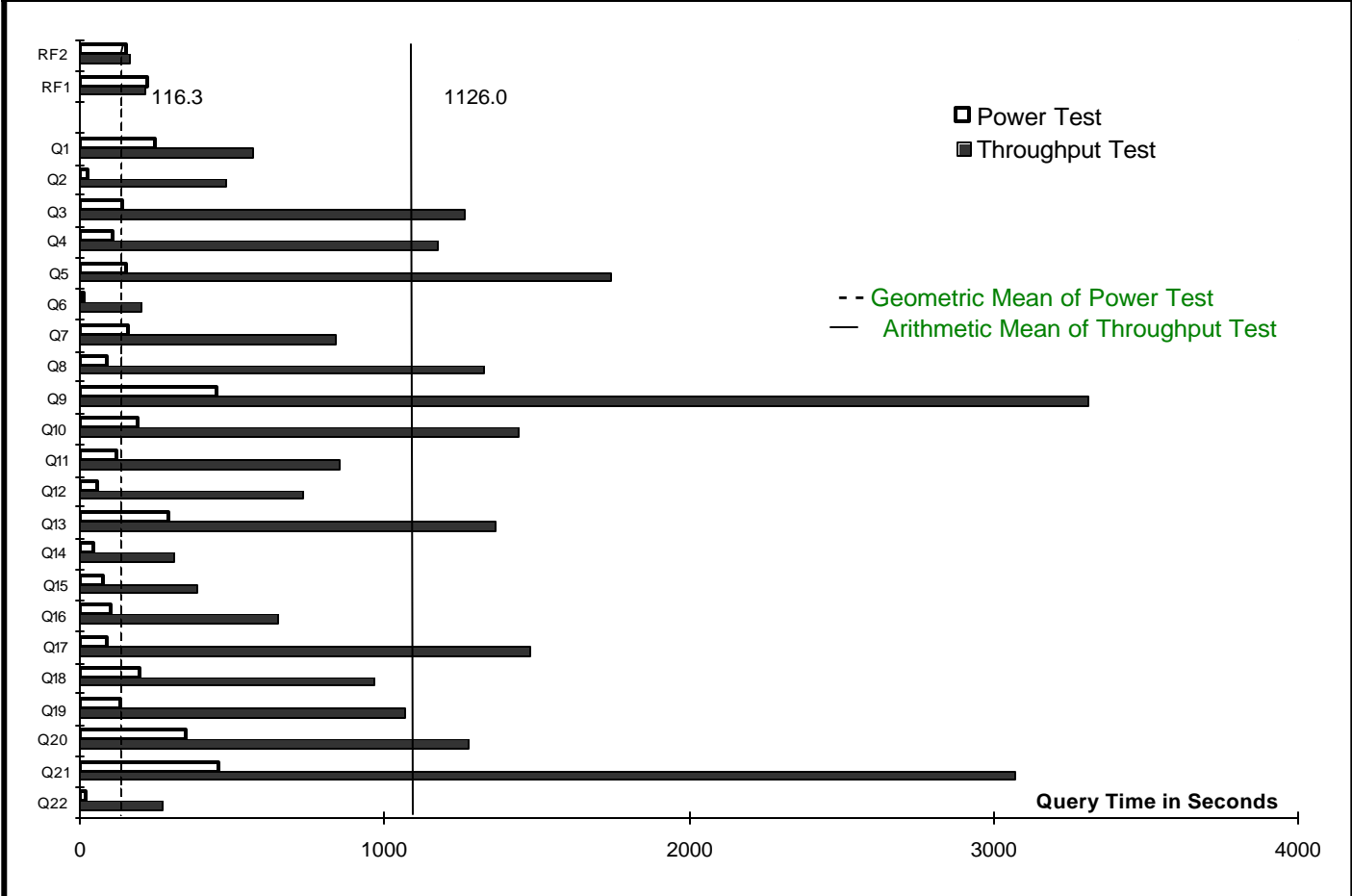
# NCR 5350

## Using Teradata V2R5.0

TPC-H Rev 2.0.0

**Report Date:**  
**January 6, 2003**

Total System Cost	Composite Query Per Hour Rating		Price/Performance	
<b>\$16,937,451</b>	<b>79,528.0</b> QphH@3000GB		<b>\$213</b> per QphH@3000GB	
Database Size	Database Manager	Operating System	Other Software	Availability Date
<b>3000GB</b>	<b>Teradata V2R5.0</b>	<b>UNIX</b> <b>MP-RAS 3.02.00</b>	<b>None</b>	<b>HW: Now</b> <b>SW: Now</b>



Database Load Time = 6Hrs 48 Mins	Load included backup: N	Total Data Storage / Database Size = 16.6
RAID (base tables):	RAID (Base tables & Auxiliary Data Structures) =	RAID (All): Y

**System Configuration**

Processors: 64 x 2 Intel Xeon 2.8 GHz CPUs w/512 KB Cache  
 Memory (per node): 4 GB Memory  
 Disk Drives (per four nodes): 3 Dual Controller Array each w/56 X 18 GB 15K drives  
 16 18GB internal drives (4 per node)  
 BYNET interconnect support with 2 64-port BYNET switches

Total GB of Storage = 49813 GB

\* Database size includes only raw data (e.g. no temp, index, redundant storage space, etc.)



# NCR 5350 Teradata DBS V2R5.0

**TPC-H Rev. 2.0.0**

**Report Date:  
January 6, 2003**

PRODUCT ID	DESCRIPTION	QTY	EXT PRICE	3 -YR MAINT
<b>Server Hardware</b>				
9130-5354-8090	NCR 5350 QUAD NODE SYSTEM CABINET	1	\$456,000	\$44,100
9130-5358-8090	NCR 5350 QUAD NODE EXPANSION CABINET	15	\$6,840,000	\$661,941
9102-5301-8090	64 NODES BYNET V2 SWITCH CABINET, 5M CABLES BUNDLED	2	\$0	\$65,033
9130-F117	MEMORY DIMM SDRAM - 1GB	64	\$115,200	\$0
9130-F118	MEMORY DIMM SDRAM - 2GB	64	\$345,600	\$0
9130-F242	LSI QUAD FIBRE CHANNEL STORAGE ADAPTER, 2GB	128	\$153,408	\$0
2300-1602-8090	A16 AWS W2K 20+ NODES	1	\$8,700	\$772
2020-1021-8090	MONITOR 22IN	1	\$479	\$207
9130-F432	TAPE - DDS-4 SCSI SGT 20/40GB	1	\$1,560	\$0
2300-K770	POWER CORD- US	1	\$21	\$0
2300-K800	KEYBOARD (US ENGLISH)	1	\$15	\$0
2020-K841	MODEM- EXTERNAL 56K USA	1	\$240	\$0
9130-K936	SIDE PANELS, STABILIZERS, MANUALS & ACCESSORIES	1	\$900	\$0
<b>Server Subtotal</b>			<b>\$ 7,922,123</b>	<b>\$ 772,052</b>
<b>Storage Devices</b>				
6000-0000-8090	WES CABINET FOR BUNDLED ARRAYS	24	\$501,600	\$76,440
6840-0000-8900	DUAL CONTROLLER BUNDLED ARRAY WITH 56 18GB 15K DRIVES	48	\$4,620,000	\$524,790
6000-F262	INSTALL FEATURE 6840-1456	48	\$0	\$0
6000-K932	WES 5.0 ACCESSORIES KIT	3	\$0	\$0
6000-F951	12 METER FC CABLE WITH LC-LC	192	\$38,400	\$0
<b>Storage Devices Subtotal</b>			<b>\$ 5,160,000</b>	<b>\$ 601,230</b>
<b>Software Licenses</b>				
F601-7730-0000	SW;EOE/MPP 8 NODES	8	\$123,600	\$98,235
F601-7811-0000	SW:OLTP AWS OP ENV	1	\$2,472	\$4,558
F7A4-1010-0000	TERADATA FASTLOAD FOR MPP UNIX NODE LICENSE	1	\$4,326	\$3,164
F7A4-0970-0000	TERADATA UTILITY PAK FOR MPP UNIX NODE LICENSE	1	\$4,326	\$836
F785-1760-0000	TERADATA/DB V2R5.0 WM 5350 MP-RAS 0 - 3 TB OF USER DATA LICENSE	1	\$1,764,000	\$441,829
<b>Software Subtotal</b>			<b>\$ 1,898,724</b>	<b>\$ 548,622</b>
<b>TOTAL</b>			<b>\$ 14,980,847</b>	<b>\$ 1,921,904</b>
<b>3-YEAR COST OF OWNERSHIP</b>				<b>\$ 16,902,752</b>

"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 the TPC at [pricing@tpc.org](mailto:pricing@tpc.org). Thank you."

Audited by: Francois Raab  
Infosizing ([www.sizing.com](http://www.sizing.com))

### Numerical Quantity Summary

#### Measurement Results:

Database Scale Factor	=	3000
Total Data Storage / Database Size	=	16.6
Start of Database Load Time	=	12-17-02 13:29:40
End of Database Load Time	=	12-17-02 20:16:44
Database Load Time	=	6 hrs. 48 min.
Query Streams for Throughput Test	=	8
TPC-H Power	=	92,894.0
TPC-H Throughput	=	68,085.1
Composite QphH@3000GB	=	79,528.0
Total System Price Over 3 Years	=	\$16,902,752
TPC-H Price/Performance Metric	=	\$213

#### Measurement Intervals:

Measurement Interval in Throughput Test (Ts) = 27,918 seconds

#### Duration of stream execution:

StreamID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream00	1217201644	12/18/2002	14:13:54	12/18/2002	15:18:25	1:04:31
Stream01	1217201645	12/18/2002	15:18:25	12/18/2002	22:11:38	6:53:13
Stream02	1217201646	12/18/2002	15:18:25	12/18/2002	22:09:47	6:51:21
Stream03	1217201647	12/18/2002	15:18:25	12/18/2002	22:11:44	6:53:18
Stream04	1217201648	12/18/2002	15:18:25	12/18/2002	22:11:26	6:53:00
Stream05	1217201649	12/18/2002	15:18:25	12/18/2002	22:12:18	6:53:52
Stream06	1217201650	12/18/2002	15:18:25	12/18/2002	22:09:07	6:50:41
Stream07	1217201651	12/18/2002	15:18:25	12/18/2002	22:11:02	6:52:37
Stream08	1217201652	12/18/2002	15:18:25	12/18/2002	22:13:17	6:54:51
Refresh		12/18/2002	15:18:25	12/18/2002	23:03:43	7:45:17

TPC-H Timing Intervals

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream0	244.2	23.1	139.0	106.4	153.8	14.1	154.9	90.8
Stream01	622.0	564.2	1384.9	930.8	1556.3	242.4	678.2	1056.3
Stream02	651.0	482.2	1454.4	1214.1	1816.4	636.3	711.9	1280.7
Stream03	612.3	406.2	1029.0	1297.8	1522.6	175.2	892.5	1657.4
Stream04	469.8	384.9	1307.1	1131.8	1931.0	70.8	1452.1	1889.4
Stream05	547.1	544.1	1158.4	1070.3	1934.0	81.0	533.7	1407.8
Stream06	632.3	440.3	963.8	1156.4	1890.4	198.8	823.7	1077.2
Stream07	582.0	666.0	1131.4	1326.1	2078.1	55.4	1087.8	1017.1
Stream08	473.5	357.5	1648.9	1271.5	1225.3	127.8	535.7	1192.9
Min Qi	469.8	357.5	963.8	930.8	1225.3	55.4	533.7	1017.1
Max Qi	651.0	666.0	1648.9	1326.1	2078.1	636.3	1452.1	1889.4
Avg Qi	573.8	480.7	1259.7	1174.8	1744.3	198.5	839.5	1322.4
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream0	452.6	188.9	121.7	59.2	286.8	46.4	73.5	100.7
Stream01	4033.3	1183.3	924.7	875.2	1282.0	561.4	368.6	497.5
Stream02	2425.1	753.7	1256.2	718.7	1438.3	237.1	380.7	584.4
Stream03	3123.6	1699.4	908.0	754.9	1498.1	223.8	570.1	773.0
Stream04	3368.1	1599.6	860.7	778.4	1421.8	135.4	464.9	762.1
Stream05	3377.3	1572.6	842.4	924.7	1312.7	319.7	423.0	682.2
Stream06	3104.8	1609.6	837.0	689.3	1200.3	222.7	229.5	690.6
Stream07	3695.1	1381.7	1033.9	491.6	1489.2	378.4	216.5	743.5
Stream08	3366.2	1688.7	169.3	653.8	1278.1	365.2	386.6	504.9
Min Qi	2425.1	753.7	169.3	491.6	1200.3	135.4	216.5	497.5
Max Qi	4033.3	1699.4	1256.2	924.7	1498.1	561.4	570.1	773.0
Avg Qi	3311.7	1436.1	854.0	735.8	1365.0	305.4	380.0	654.8
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream0	90.6	197.0	132.2	348.5	460.4	19.6	217.9	149.0
Stream01	1285.4	884.4	1292.2	1207.1	3092.6	270.4	212.0	164.5
Stream02	1488.7	944.7	1124.5	1791.6	2857.8	433.4	215.0	163.8
Stream03	1070.5	858.3	970.2	1323.7	3299.6	132.5	216.5	163.9
Stream04	1462.0	984.1	704.9	445.5	2885.8	270.3	213.2	161.5
Stream05	1519.8	932.2	823.9	1260.1	3334.1	231.5	215.5	164.5
Stream06	1922.0	1024.8	1224.5	1479.7	3057.3	166.3	214.2	162.3
Stream07	1168.7	1167.3	1138.7	1237.0	2317.2	354.5	214.6	163.7
Stream08	1921.3	925.6	1283.4	1466.1	3729.8	319.6	218.0	162.2
Min Qi	1070.5	858.3	704.9	445.5	2317.2	132.5	212.0	161.5
Max Qi	1922.0	1167.3	1292.2	1791.6	3729.8	433.4	218.0	164.5
Avg Qi	1479.8	965.2	1070.3	1276.3	3071.8	272.3	214.9	163.3