

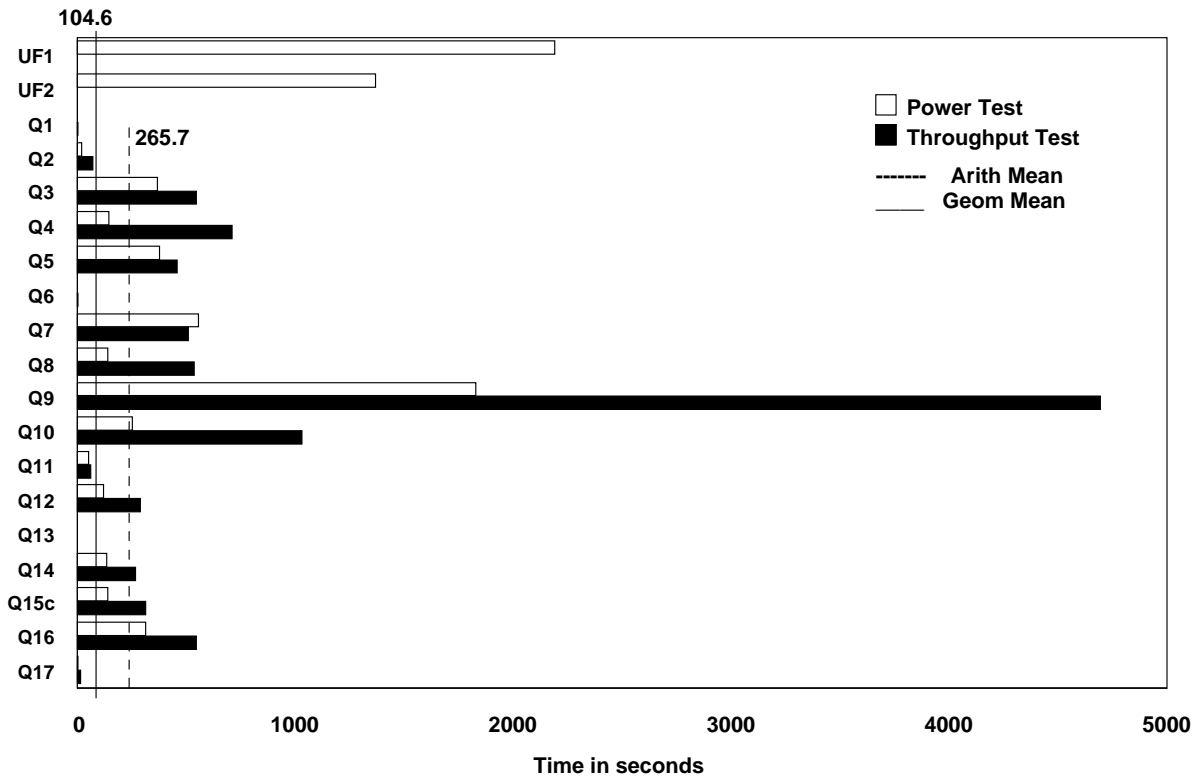


**IBM Netfinity 7000 M10
with DB2 UDB 5.2.0**

TPC-D Rev 1.3.1

Report Date: 1 Dec. 1998

Total System Cost		TPC-D Power	TPC-D Throughput	Price/Performance
\$220,427		3450.0 QppD@100GB	831.2 QthD@100GB	\$130 per QphD@100GB
Database Size	Database Manager	Operating System	Other Software	Availability Date
100GB	DB2 UDB Enterprise Edition 5.2.0	Windows NT Server 4.0	Visual C++ 5.0	December 31, 1998



Database Load Time:
35h 48m 57s

**Total Data Storage/Database
Size: 8.37**

RAID: Y

Components

Qty

Processors	4	400MHz Pentium II Xeon / 1MB L2 Cache
Memory		2560MB
Disk Controllers	6	Netfinity ServeRAID-3H Ultra2 SCSI Adapter
Disk Drives	90	9.1GB
	4	4.51GB
Total Storage		837.04GB



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Description	Part Number	Source	Unit Price	Qty	Ext. Price	5-Yr. Maint.**
Server Hardware						
IBM Netfinity 7000 M10 / 400MHz / 1MB L2 Cache Pentium II Xeon (Rack Model)	8680-2RU	1	12,374	1	12,374	6,415
400MHz / 1MB L2 Cache Processor Upgrade	01K8007	1	3,865	3	11,595	0
512 MB (4x128) Memory Expansion Kit	01K8045	1	2,710	5	13,550	0
Memory Card	01K8004	1	516	1	516	0
32MB Battery Backup Cache	28L1003	1	315	6	1,890	0
Netfinity ServeRAID-3H Ultra2 SCSI Adapter	01K7207	1	1,785	6	10,710	0
Netfinity 4.51GB 10K Wide Ultra SCSI Drive	01K8009	1	646	4	2,584	0
Netfinity 4.2M Ultra2 SCSI Cable	03K9311	1	107	18	1,926	0
IBM EtherJet 100/10 PCI Adapter	86H2432	1	77	1	77	0
IBM G42 14" (13.2" Viewable) Color Monitor	654000N	1	202	1	202	215
10 / 20GB NS Internal SCSI Tape Drive	01K1319	1	628	1	628	0
Netfinity Rack	9306900	1	1,672	1	1,672	0
Side Panel Kit	94G6669	1	194	1	194	0
Subtotal					\$57,918	\$6,630
Server Software						
DB2 UDB 5.2.0 Enterprise Edition		2	24,998	1	21,748	0
IBM Passport/Advantage Discount on DB2 UDB = 13%		2	(3,250)			
Microsoft Windows NT 4.0 with SP4		1	665		665	0
Microsoft Visual C++ and Subscription Service		1	418	1	418	0
Microsoft Priority Plus Database Server		3	2,095	5		10,475
Subtotal					\$22,831	\$10,475
Storage Devices						
IBM Netfinity EXP15 Rack Storage Expansion Enclosure (includes 2 spares)	35202RU	1	2,503	11	28,567	0
IBM Netfinity EXP10 9.1GB 10K Wide Ultra SCSI Drive (includes 10% spares)	01K8499	1	960	99	95,040	0
Subtotal					\$122,573	\$0
Total					\$203,322	\$17,105

Pricing: 1 - CDW Computer Centers, Inc.; 2 - IBM Corp.; 3 - Microsoft Corp.

**** The standard 3-year warranty and the extended warranty on all hardware are for 7x24, on site same day coverage.**

Audited by Francois Raab of Information Paradigm, Inc.

Five-Year Cost of Ownership: \$220,427

QppD @ 100GB: 3450.0

QthD @ 100GB: 831.2

QphD @ 100GB: 1693.4

\$/ QphD @ 100GB: \$130

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 specification. If you find that stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.



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with DB2 UDB 5.2.0**

TPC-D Rev 1.3.1

Report Date: 1 Dec. 1998

Numerical Quantities Summary

Measurement Results:

Database Scaling (SF/Size)	100
Total Data Storage/Database Size	8.37
Database Load Time	35:48:57
Query Streams for Throughput Test	3
TPC-D Power Metric (QppD@100GB)	3450.0
TPC-D Throughput Metric (QthD@100GB)	831.2
Composite Query-per-Hour Rating (QphD@100GB)	1693.4
Total System Price over 5 Years	\$220,427
TPC-D Price/Performance Metric (\$/QphD@100GB)	\$130

Measurement Intervals:

Measurement Intervals in Throughput Test (Ts) = 22,088 seconds

Duration of Stream Execution

Stream ID	Seed Used	Start Date	Start Time	End Date	End Time
Stream 00	18999	11/22/98	14:57:51	11/22/98	17:12:38
Stream 01	8077	11/22/98	17:13:02	11/22/98	19:57:46
Stream 02	6777	11/22/98	17:13:02	11/22/98	20:25:32
Stream 03	4184	11/22/98	17:13:03	11/22/98	19:42:31
Updates		11/22/98	17:13:02	11/22/98	23:21:10

Timing Intervals (in seconds):

Stream ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Stream 00	3.3	21.2	374.2	149.8	381.2	1.8	561.9	144.2	1833.9
Stream 01	4.7	123.8	551.6	735.6	463.3	2.8	588.3	781.4	4259.2
Stream 02	7.8	21.1	378.6	1162.4	322.5	13.0	400.8	140.4	6350.1
Stream 03	4.6	92.3	718.9	251.2	596.2	4.0	558.9	695.5	3494.6
Minimum	4.6	21.1	378.6	251.2	322.5	2.8	400.8	140.4	3494.6
Average	5.7	79.1	549.7	716.4	460.7	6.6	516.0	539.1	4701.3
Maximum	7.8	123.8	718.9	1162.4	596.2	13.0	588.3	781.4	6350.1

Stream ID	Q10	Q11	Q12	Q13	Q14	Q15c	Q16	Q17	UF1	UF2
Stream 00	253.4	53.7	126.4	1.8	140.1	143.7	317.7	9.4	2196.9	1372.7
Stream 01	918.3	65.8	383.2	2.4	211.7	186.7	580.6	24.4	13695.2	1367.6
Stream 02	1026.9	53.1	332.8	5.9	417.3	590.9	318.0	8.7	2140.4	1378.7
Stream 03	1167.8	75.8	160.3	1.8	179.6	183.2	759.8	24.9	2136.1	1369.8
Minimum	918.3	53.1	160.3	1.8	179.6	183.2	318.0	8.7	2136.1	1367.6
Average	1037.7	64.9	292.1	3.4	269.5	320.3	552.8	19.3	5990.6	1372.0
Maximum	1167.8	75.8	383.2	5.9	417.3	590.9	759.8	24.9	13695.2	1378.7