

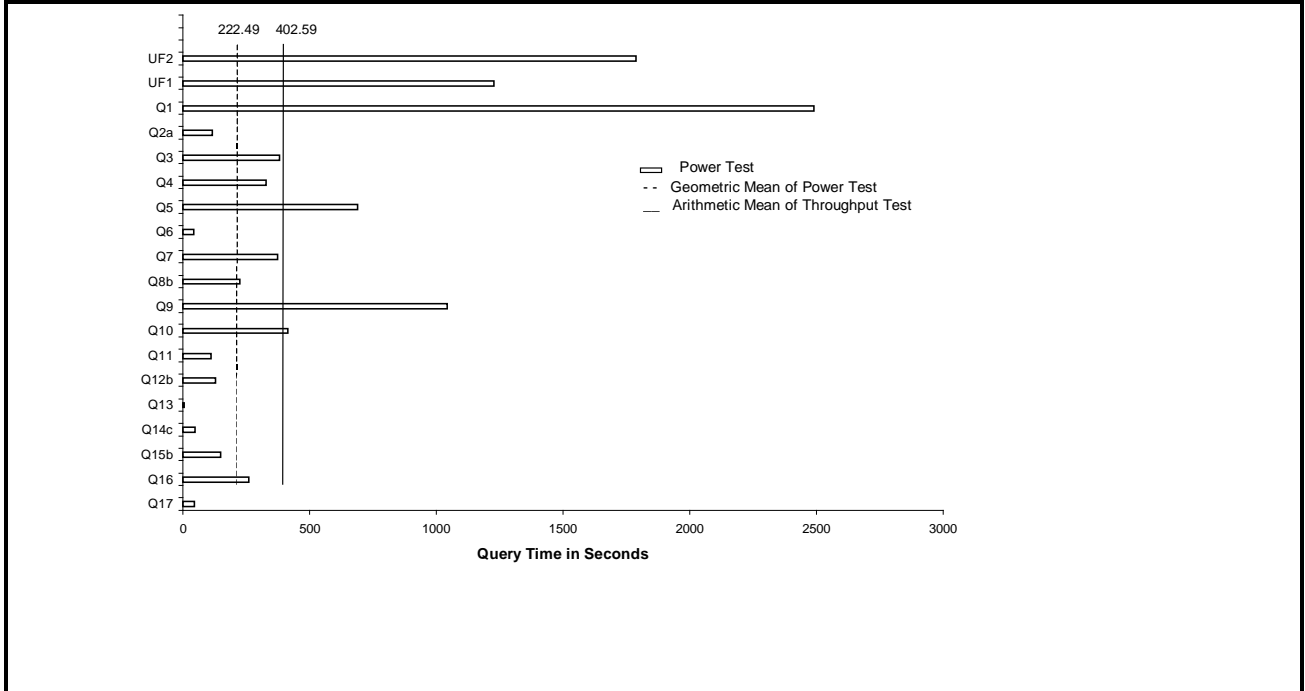


*Executive Summary*

 	<b>Silicon Graphics</b> <b>Origin2000 running</b> <b>Oracle 8.0.4</b>	TPC-D™ 1.3.1
		REPORT DATE: <b>July 14, 1998</b>

TOTAL SYSTEM COST	TPC-D POWER	TPC-D THROUGHPUT	PRICE/PERFORMANCE
<b>\$2,924,409</b>	<b>4,853.9</b> QppD@300GB	<b>1,861.9</b> QthD@300GB	<b>\$973</b> \$/QphD@300GB

DATABASE SIZE	DATABASE MANAGER	OPERATING SYSTEM	OTHER SOFTWARE	AVAILABILITY DATE
300GB	Oracle 8.0.4	IRIX 6.5	MIPSpro™ C Compiler, XFS™ Plexing	July 14, 1998



Database Load Time: 30 Hours 44 Minutes 46 Seconds	DISK SIZE/DATABASE SIZE =5.87	RAID: N
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The tested system was a Silicon Graphics Origin2000 with:

- Thirty Two 250 MHz MIPS R10000 64-bit CPUs, each with 4MB of L2 cache
- 16 GB of main memory
- One Base IO card, which includes internal SE Ultra SCSI, external SE Ultra SCSI, 100Base-Tx ethernet port & two 460kbps serial ports.
- 1 9.1 GB internal SCSI disk drive
- 3 4.5 GB internal SCSI disk drives.
- 17 2-port fibre channel adapters.
- 205 9.1 GB fibre channel disk drives
- Total GB of Storage = 1,759.0
- 1 internal CDROM drive
- 1 4mm DAT drive



**ORACLE®**

**SILICON  
GRAPHICS  
Origin2000**

**TPC-D™ 1.3.1**

**Report Date:  
July 14, 1998**

Description	Part Number	Unit Price	Qty	Extended Price	5 yr. Maint.
<b>Origin2000 Server Hardware</b>					
Origin2000 Rack,2xR10000 250Mhz,4MB Cache,10/100BaseT port,CDROM	R1-H65002-4	\$83,000	1	\$83,000	\$43,776
Origin2000 Expansion Rack w/Insert Module,2xR10000 250MHz,4MB cache	HU1-RL6502-4	\$60,590	1	\$60,590	\$31,960
Origin2000 Insert Module w/2xR10000 250MHz,4MB cache	HU1-ML6501-4	\$44,820	2	\$89,640	\$47,280
Node Board, 2xR10000 250MHz, 4MB cache	HU1-H6502-4	\$37,350	12	\$448,200	\$236,400
Upgrade CrayLink cables for 17-32 CPU configurations	HU-IC-17T032	\$12,450	1	\$12,450	\$1,644
Standard Internal System Disk Drive - 9.0GB Capacity	FTO-9GB	\$0	1	\$0	\$0
Origin2000 Rack System Destination Kit	DK-LR2-003	\$0	1	\$0	\$0
Additional Internal Disk Drives - 4.5GB Capacity	P-S-4	\$996	3	\$2,988	\$786
First 1GB Memory per Node Board	OPN-1GB-D2	\$12,749	16	\$203,984	\$26,640
2 Port Fibre Channel XIO Adapters for O2000	XT-FC-2P	\$3,320	17	\$56,440	\$7,438
10-Meter Copper Fibre Channel Cables (28 + 3 spares)	X-F-COP-10M	\$124	31	\$3,844	\$0
<b>Subtotal</b>				<b>\$961,136</b>	<b>\$395,924</b>
<b>Origin2000 Server Software</b>					
IRIX 6.5 Advanced Server Environment for Origin2000	SC4-ASEO2000-6.5	\$1,660	1	\$1,660	\$1,473
CD-ROM Update Media Required (support only)	MO5-CD	\$0	1	\$0	\$1,140
Data Base Accel. (Oracle & Informix) including nsort	SC4-DBA-2.0	\$830	1	\$830	\$750
RTU for XFS Volume Plexing Including Mirroring	SR4-PLEX-2.0	\$3,316	1	\$3,316	\$3,211
MIPSpro C Compiler 7.2.1, 5 User for IRIX	SC4-C-7.2.1	\$1,909	1	\$1,909	\$1,848
Oracle8 Sever - Enterprise Edition (v. 8.0.4) w/ Partitioning Option	Oracle8.0.4 IRIX	\$401,280	1	\$401,280	\$533,120
<b>Subtotal</b>				<b>\$408,995</b>	<b>\$541,542</b>
<b>Storage Devices</b>					
Empty Fibre Channel Rack	P-F-RACK	\$6,225	4	\$24,900	\$3,325
Rackmount FibreVault w/10x9.1GB Fibre Channel Disk Drives	P-F-B10X9-R	\$23,240	21	\$488,040	\$64,344
Rackmount FibreVault w/ No Disks	P-F-BOX-R	\$4,150	7	\$29,050	\$4,816
12GB S/E SCS12 3.5" DDS3-DAT tape drive	P-S-DDS-SCA	\$2,075	1	\$2,075	\$262
<b>Subtotal</b>				<b>\$544,065</b>	<b>\$72,747</b>
<b>Total</b>				<b>\$1,914,196</b>	<b>\$1,010,213</b>
<b>Notes: No Discounts on SGI Quotes.</b>		<b>Five-Year Cost of Ownership: \$2,924,409</b>			
		<b>QphD: 3,006.2</b>			
<b>Audited by Performance Metrics Inc.</b>		<b>\$ / QphD: \$973</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 items, please inform the TPC at [pricing@tpc.org](mailto:pricing@tpc.org).



# Numerical Quantities

TPC-D™ Rev. 1.3.1

Report Date:  
July 14, 1998

## Measurement Results:

Database Scaling (SF/Size)	=	300
Total Data Storage/Database Size	=	5.87
Database Load Time	=	30 Hrs, 44 M, 46 S
Query Streams for Throughput Test (S)	=	0
TPC-D Power Metric (QppD@300GB)	=	4,853.9
TPC-D Throughput Metric (QthD@300GB)	=	1,861.9
Total System Price Over five years	=	\$2,924,409
TPC-D Power Throughput Metric (\$/QphD@300GB)	=	\$973

## Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	=	9,861.1 sec
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## Duration of Stream Execution:

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Total Time
Stream 00	2020319609	7/11/98	00:53:54	7/11/98	03:38:15	2:44:21
UF1		7/11/98	00:53:54	7/11/98	01:14:22	0:20:28
UF2		7/11/98	03:08:27	7/11/98	03:38:15	0:29:48

## TPC-D Timing Intervals (in seconds):

Q1	Q2a	Q3	Q4	Q5	Q6	Q7	Q8b	Q9
2490.01	114.87	380.89	328.27	690.08	41.53	373.45	224.45	1042.81

Q10	Q11	Q12b	Q13	Q14c	Q15b	Q16	Q17	UF1	UF2
413.00	109.68	129.75	4.29	45.89	148.95	261.27	44.66	1228.2	1788.12