
	Compaq AlphaServer GS160 Model 6/731	TPC-C Rev. 3.5
	16 CPU Client/Server System	Report Date: July 3, 2000

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$2,959,745	55,221	\$53.60	August 31, 2000

Processors	Database	Operating System	Other Software	Number of Users
16 731MHz DECchip 21264A	Oracle V8.1.7	Compaq Tru64 UNIX V5.1	Compaq DB Web Connector V1.1	46,000



4 Compaq ProLiant 1600s

Gigaswitch

46 Ethernet Segments on 10/100 MBPS
Ethernet Modules
1000 Users Per Segment
Total PCs – 46,000

**Compaq AlphaServer GS160
Model 6/731 16 CPU 64GB**

- 2 380600-001 (Cabs)
- 4 380620-001 (Cabs)
- 63 DS-RZ1EA-VW (18GB)
- 184 DS-RZ1DA-VW (9GB)
- 24 DS-RZ1ED-VM (18GB)

System Components	Server		Client (each of 4)	
	Qty	Type	Qty	Type
Database Nodes	1	Compaq AlphaServer GS160 Model 6/731	1	Compaq ProLiant 1600
Processors	16	6/731 MHz Alphachip 21264A	2	600 MHz Intel Pentium III
Cache Memory		4MB Cache	1	512KB Cache
Memory	16	4GB Memory	1	128MB Memory
Total Memory	64	GB Memory	2	256MB Memory
Disk Controllers	8	Fiber Storage Controllers		640MB Total
Disks	87	18.1GB Disks	1	18GB Disks
	184	9.1GB Disks		
Total Disk Storage	3249.1	GB		



**AlphaServer GS160
Model 6/731
16 CPU C/S System**

**TPC-C REV 3.5 EXECUTIVE SUMMARY
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Report Date: July 3, 2000

Description	Part Number	Third Party Brand	Unit Pricing	Qty	Extended		5 yr. Maint.
Server Hardware							
Compaq AlphaServer GS160 6/731 Model 32	DA-160CC-AA		1	366,000	1	366,000	237,508
GS160/320 CPU SMP Upgrade	3X-KN8AA-AA		1	23,000	1	23,000	Inc.
GS160/320 ADD-on CPU UNIX SMP	3X-KN8AA-SA		1	40,000	7	280,000	Inc.
GS160/320 4GB Memory Module	3X-MS8AA-SA		1	42,000	16	672,000	Inc.
PCI Fibre Adapter	DS-KGPSA-CA		1	4,000	8	32,000	Inc.
PCI to Ultra SCSI Adapter	KZPBA-CA		1	460	1	460	Inc.
1600 Watt Bulk Power Converter	H7506-AA		1	10,000	2	20,000	Inc.
GS160/320 PCI Expansion Box	3X-DW WPA-SA		1	15,000	3	45,000	Inc.
GS80/160/320 Expansion Cab	H9A20-AA		1	5,000	1	5,000	Inc.
15M Fibre Op Cable 50/125	234457-B23		1	227	8	1,816	Inc.
PCI to gbE SX Adapter	DEGPA-SA		1	1,949	4	7,796	Inc.
SC-SC DUAL FO Cbl, MM, PP, 4.5M	BN34B-4E		1	96	4	384	0
ESA 12000 Storage Array (two pair HSG80)	380620-001		1	88,629	4	354,516	106,386
ESA 12000 Storage Array (single pair HSG80)	380600-001		1	55,639	2	111,278	Inc.
15M Fibre Op Cable 50/125	234457-B23		1	227	40	9,080	0
9.1GB 7200rpm UWSCSI Disk**	DS-RZ1DA-VW		1	650	207	134,550	Spared
18.2GB 7200rpm UWSCSI Disk**	DS-RZ1EA-VW		1	1,195	14	16,736	Spared
18.2GB 7200rpm UWSCSI Disk**	DS-RZ1ED-VW		1	1,559	60	93,540	Spared
16 port Fibre Switch	DS-DSGGA-AB		1	38,333	4	153,332	53,984
Short Wave Optical GBIC	3380561-B21		1	492	48	23,616	Inc.
12/24gb 4MM DAT Tape	TLZ10-LB		1	1,135	1	1,135	1,274
GS-Router 16 Slot Chassis	DGSRA-BA		1	9,995	1	9,995	2,868
GS-/R 64MB Switch Control Pro	DGSRC-BA		1	8,995	1	8,995	2,868
GS/Rtr 2-P Geeth SX 16mB Line Card	DGSRs-AB		1	7,995	4	31,980	11,472
GS/R 16-Slot Swtiching Fabric Module	DGSRD-AA		1	4,995	2	9,990	2,700
GS/Rtr 8-P Fast Ethernet 16mb Line Card	DGSRT-AB		1	5,995	6	35,970	12,144
VT510, WHITE, NORTH AMER, NO KEY	VT510-AA		1	395	1	395	0
US & Canada/English KB	PCXLA-NA		1	25	1	25	0
					Subtotal	2,448,589	431,204
Server Software							
5YR TRU64UNIX BRZ9x5	FM-W16U9-60		1	34,074	1	34,074	34,074
5YR GS160/320 TRU64 UNIX SMP	FM-W16SM-60		1	8,550	7	59,850	59,850
HSG80 SW U/A LIC/MCD/DOC	380553-001		1	750	20	15,000	
GIGAsw/Rtr All Lic/MCD Pkg	QB-64PAA-WA		1	3,995	1	3,995	
5YR 5x9 HS*80 SW Dual Controller	FM-DBAL3-60		1	13,937	10	139,370	139,370
5YR 5x9 HS*90 Platform SW	FM-PBAT1-60		1	1,514	10	15,140	15,140
Dig UNIX Alpha CDRM	QA-MT4AA-H8		1	395	1	395	
Oracle RDBNS and SQL * Net	Oracle		2	318,850	1	318,850	
Oracle RDBMS and SQL * Net 5yr Maintenance	Oracle		2	318,850	1	318,850	318,850
					Subtotal	338,240	567,284
Client Hardware							
Compaq Proliant 1600	153552-001		1	4,450	4	17,800	10,960
Processor 600Mhz	153555-B21		1	1,837	4	7,348	Inc.
256MB SDRAM DIMM Memory	313616-B21		1	1,688	8	13,504	Inc.
Ethernet Dual Channel	338456-B21		1	482	4	1,928	Inc.
Gigabit Daughter CD Upgrade	338456-B23		1	918	4	3,672	Inc.
18GB Drive	388144-B22		1	1,271	4	5,084	Inc.
SC-SC DUAL FO Cbl, MM, PP, 4.5M	BN34B-4E		1	96	4	384	Inc.
V700 15" Color Monitor	325900-001		1	205	6	1,230	Spared
					Subtotal	50,950	10,960
Client Software							
Application Optimizer WNT Server Edition	QB-641AA-SA		1	450	4	1,800	1,440
					Subtotal	1,800	1,440
User Connectivity							
Compex Micro Hub/8-8 Port Hub***	DEH2924		3	\$32.50	6325	205,563	Spared
					Subtotal	205,563	

Notes: 10% Spares**

ICS Discount: 38% on Server Hardware/Software based on volume.

(\$957,877)

ICS Discount: 20% on FM and FR numbers based on volume.

(\$138,408)

**Subtotal
Five Year Cost of Ownership**

\$2,087,265

\$872,480

\$2,959,745

1=IC System Solutions, 2=Oracle, 3= MicroWarehouse

tpm C Rating:

55,221

Audited by InfoSizing

\$/ tpm C:

\$53.60

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. Thank you.

Numeric Quantities Summary
AlphaServer GS160 Model 6/731 16 CPU Client Server System

MQTH

MQTH, computed Maximum Qualified Throughput	55,221
% Throughput difference, reported and reproducibility runs	.011

Response Times in seconds

Transaction	90th percentile	Average	Maximum
New-Order	2.568	1.037	14.364
Payment	2.176	0.863	13.928
Order-Status	2.229	0.936	13.297
Delivery (interactive)	1.379	0.527	11.160
Delivery (deferred)	1.359	0.607	13.359
Stock-Level	1.993	0.828	13.139
Menu	1.514	0.561	11.343

Transaction Mix in percent of total transactions

Transaction	Total Occurrences	Percentage
New-Order	6626590	44.979%
Payment	6336054	43.007%
Order-Status	589842	4.004%
Delivery (interactive)	589950	4.004%
Stock-Level	590295	4.007%

Keying/Think Times in seconds

Transaction	Minimum	Average	Maximum
New-Order	18.000/0.000	18.000/12.002	18.159/119.866
Payment	3.000/0.000	3.000/12.004	3.153/119.951
Order-Status	2.000/0.000	2.000/10.008	2.148/ 99.851
Delivery (interactive)	2.000/0.000	2.000/ 5.000	2.154/ 49.964
Stock-Level	2.000/0.000	2.000/ 5.003	2.144/ 49.925

Emulation Delay in seconds

Transaction	Response Time	Menu Response Time
New-Order	0.10	0.10
Payment	0.10	0.10
Order-Status	0.10	0.10
Delivery (interactive)	0.10	0.10
Stock-Level	0.10	0.10

Test Duration

Ramp up time	60 minutes
Measurement interval	120:00.00 minutes
Number of checkpoints	4
Number of New Order transactions	6626590
Number of transactions (all types) completed in measurement interval	14732731