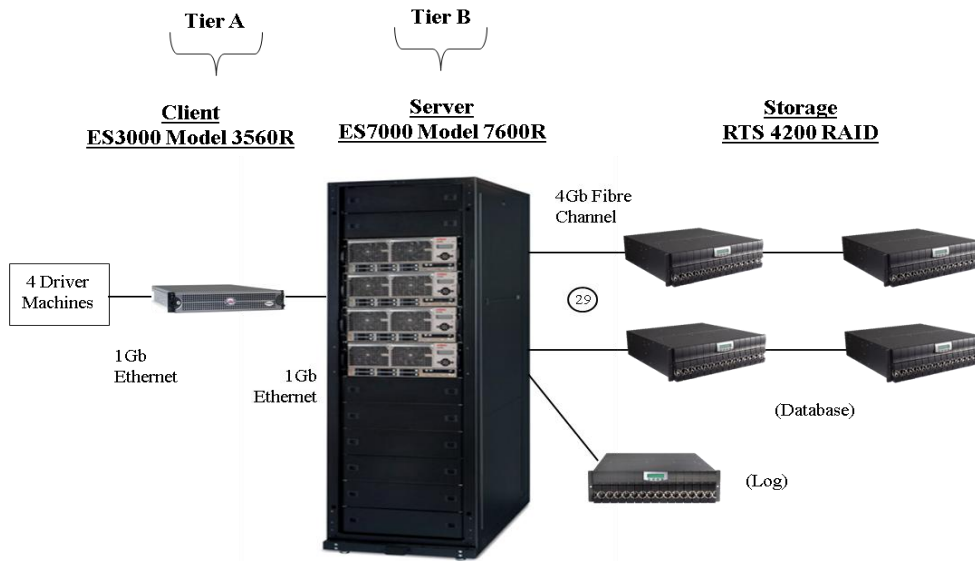


<b>UNISYS</b>	<b>ES7000 Model 7600R Enterprise Server (16s)</b>		<b>TPC-E 1.9.0 TPC Pricing 1.5.0</b>
			<b>Report Date November 2, 2009</b>
TPC-E Throughput	Price/Performance	Availability Date	Total System Cost
<b>2012.77 tpsE</b>	<b>\$958.23 USD per tpsE</b>	<b>May 6, 2010</b>	<b>\$1,928,688 USD</b>

**Database Server Configuration**

Operating System	Database Manager	Processors/Cores/ Threads	Memory
<b>Microsoft Windows Server 2008 R2 Datacenter Edition</b>	<b>Microsoft SQL Server 2008 R2 Datacenter Edition</b>	<b>16/96/96</b>	<b>1024GB</b>



<b>Client</b> <b>ES3000 Model 3560R</b> 2 x Intel® Quad-core Xeon™ E5520 2.26GHz w/ 8MB Smart cache, 6 GB memory, 1 x 73GB internal disk, 4 Inbuilt 1Gb Eth. cntrls.	<b>Server</b> <b>ES7000 Model 7600R</b> 16 x Intel® Hex-core Xeon™ X7460 2.66GHz w/ 16MB L3 cache, 1 TB memory, 2 x 73GB SAS disk, internal , 1 x PCI SAS RAID cntrl, internal, 15 x PCI Fibre Channel cntrls, 8 Inbuilt 1Gb Eth. cntrls. (2 used).	<b>Storage</b> <b>RTS 4200 RAID Storage</b> 870 x 73GB 12 x 146GB External Fibre Channel disks, 31 x FC External RAID controllers
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Initial Database Size	Redundancy Level: 1	Database Storage
<b>8,309 GB</b>	<b>RAID-10</b>	<b>870 x 73GB 15K rpm 12 x 146GB 15K rpm</b>



## ES7000 Model 7600R Enterprise Server (16s)

**TPC-E 1.9.0**  
**TPC Pricing 1.5.0**

Report Date  
November 2, 2009

Description	Part Number	Price Source	Unit Price	Qty.	Extended Price	3-yr Maint. Price
<b>Server Hardware:</b>						
ES77600R 16x X7460, 64GB	ES7764163-100	1	\$145,290	1	\$145,290	\$6,768
ES7000 7600R Installation Accessory Kit	ES790001-IAK	1	\$100	1	\$100	
Snap-in 1U Filler	RCK4219421-1UP	1	\$20	3	\$60	
Snap-in 3U Filler	RCK4219421-3UP	1	\$22	4	\$88	
Power Strip	PWR4243001-SD	1	\$392	2	\$784	
Power Strip	PWR4243001-SVD	1	\$403	2	\$806	
42U Rack	RCK4219421-FSS	1	\$2,769	1	\$2,769	
Rack Trim Kit	RCK4219421-OTK	1	\$350	1	\$350	
Internal RAID + 2 x 73GB Hard Drive	FAC7760731-IDK	1	\$2,403	1	\$2,403	
Initial Memory - 16GB	FAC7102803-ICA	1	\$2,378	4	\$9,512	
Memory Expansion - 16GB	FAC7102803-16G	1	\$1,525	56	\$85,400	
Emulex LPe12002 - Disk HBA	FCH9540231-PCE	1	\$3,986	15	\$59,790	
<b>Subtotal</b>					<b>\$307,352</b>	<b>\$6,768</b>
<b>Server Software:</b>						
Windows Server 2008 R2 Datacenter Edition	P71-06367	2	\$2,357	16	\$37,712	
SQL Server 2008 R2 Datacenter Edition	*	2*	\$45,807	16	\$732,912	
SRVC: Microsoft Problem Resolution Services		2		1		\$259
<b>Subtotal</b>					<b>\$770,624</b>	<b>\$259</b>
<b>Storage Hardware:</b>						
Rack Mount Kit	RTS400012-RK	1	\$220	30	\$6,600	
Disk Enclosure with (15) 73GB Disk - 30 Pack	RTS4307315-30P	S	\$333,144	1	\$333,144	
Disk for RAID Enclosure	RTS4307315-4FH	S	\$484	435	\$210,540	
Dual RAID Controller for Log	RTS422880-T2	1	\$15,840	1	\$15,840	
SAN Manager Software	RTS44101-SAN	1	\$2,246	1	\$2,246	
146GB Disk Drive	RTS4314615-4FH	1	\$660	12	\$7,920	
RAID Controller 1x1 Style 1 - 15 Pack	RTS4228801-P15	1	\$104,277	1	\$104,277	
RAID Controller 1x1 Style 1	RTS422880-1X1	1	\$10,102	6	\$60,612	
RAID Controller 1x1 Style 2 - 5 Pack	RTS4228802-P05	1	\$45,459	1	\$45,459	
RAID Controller 1x1 Style 2	RTS422880-T1	1	\$10,340	3	\$31,020	
Optical Transceiver	RTS400150-SFP	1	\$110	29	\$3,190	
AC Power Cord	RTS400740-CBL	1	\$11	60	\$660	
UPS for Log Enclosure	UPS120	5	\$1,000	2	\$2,000	
<b>Subtotal</b>					<b>\$823,508</b>	<b>\$0</b>
<b>Infrastructure</b>						
8 port KVM switch	KVM9083101-SWC	1	\$1,300	1	\$1,300	
Rack mount LCD w/1U Drawer	MON2145-LCD	1	\$2,700	1	\$2,700	
Rack mount keyboard, w/touchpad, USB	KBR210501-USB	1	\$275	1	\$275	
42U Rack - No Doors	RM421940-FRM	1	\$1,286	4	\$5,144	
8 Outlet Power Strip	SFR9-PWR	1	\$170	17	\$2,890	
Power Cord	USE1936-LC6	1	\$90	17	\$1,530	
16 Port Ethernet Switch (Netgear) incl 2 spares	FS116	4	\$60	5	\$300	
Fiber Channel Cable incl 2 spares	GCFAZLLM20-M	3	\$24	32	\$768	
Ethernet Cable incl 2 spares	GCP0888650-BL	3	\$7	37	\$259	
<b>Subtotal</b>					<b>\$15,166</b>	<b>\$0</b>
<b>Client Hardware:</b>						
ES3/3560R Server	ES3560031-SVR	1	\$1,085	1	\$1,085	\$1,005
ES3/3560R Server, 2.26GHz CPU	ES3560341-CPU	1	\$579	1	\$579	
ES3/3560R No Bezel	ES3560012-BZL	1	\$69	1	\$69	
Hard Drive - 73GB,10K SAS 2.5	ES3599011-DSK	1	\$239	1	\$239	
ES3/3560R Slide Ready Rail,No Cb Mng Arm	ES3560011-RCK	1	\$149	1	\$149	
ES3000 DVD ROM, SATA, Internal	ES3599021-ODD	1	\$30	1	\$30	
ES3/3560R High Output PSply,NonRdnt,870W	ES3560111-PWR	1	\$30	1	\$30	
ES3000 6GB,6x1GB,1333M,1R UDIMM,2P,OP	ES3599591-MEM	1	\$272	1	\$272	
ES3/3560R Server, 2.26GHz 2nd CPU	ES3599341-CPU	1	\$579	1	\$579	
Power Cord	OSM1000-PRC	1	\$13	1	\$13	
USB to Cat5 KVM Adapter	KVM9002301-CNV	1	\$250	1	\$250	
<b>Subtotal</b>					<b>\$3,295</b>	<b>\$1,005</b>
<b>Client Software:</b>						
Windows Server 2008 R2 Standard Edition	P73-04980	2	\$711	1	\$711	
<b>Subtotal</b>					<b>\$711</b>	<b>\$0</b>
Unisys Product Pricing (List Pricing) - Michael Heifner (215)-986-4757 where Price Source = 1 or S					<b>Total USD</b>	<b>\$1,920,656</b>
					<b>\$8,032</b>	

**Notes:**

1. HW & SW maintenance at 24 x 7 w/ 4 hr. max. response time for spares.
2. Price Source: 1 = Unisys Product Price, Unisys Maintenance Price  
2 = Microsoft 3 = CableSys 4 = NewEgg  
5 = IQstor

S One or more components of the measured configuration have been substituted in the Priced Configuration - see FDR for details

\* This component is not immediately orderable. See the FDR for more information

Benchmark results and test methodology audited by Lorna Livingtree of Performance Metrics, 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 assumption 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 benchmarks 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.

**3-Year Cost of Ownership: \$1,928,688 USD**  
**TPC-E Throughput: 2,012.77 tpsE**  
**Price/Performance: \$958.23 USD**

<b>UNISYS</b>	<b>ES7000 Model 7600R Enterprise Server (16s)</b>			<b>TPC-E 1.9.0</b>	
				<b>Report Date</b> November 2, 2009	
<b>Numerical Quantities Summary</b>					
<b>Reported Throughput:</b>				<b>2012.77</b>	
<b>Configured Customers:</b>				<b>1,025,000</b>	
<b>Response Time (in seconds)</b>	<b>Minimum</b>	<b>Average</b>	<b>90<sup>th</sup> %tile</b>	<b>Maximum</b>	
Broker-Volume	0.01	0.10	0.15	3.05	
Customer-Position	0.00	0.04	0.07	2.19	
Market-Feed	0.00	0.04	0.07	8.50	
Market-Watch	0.00	0.05	0.09	7.04	
Security-Detail	0.00	0.02	0.04	2.02	
Trade-Lookup	0.00	0.48	0.72	4.08	
Trade-Order	0.00	0.10	0.15	3.26	
Trade-Result	0.00	0.11	0.18	12.03	
Trade-Status	0.00	0.03	0.05	3.12	
Trade-Update	0.01	0.53	0.73	4.01	
Data-Maintenance	0.00	0.08	N/A	1.19	
<b>Transaction Mix (in percent of total transactions)</b>			<b>Transaction Count</b>		<b>Mix</b>
Broker_Volume			7,101,094		4.900%
Customer-Position			18,841,160		13.000%
Market-Feed			1,449,216		1.000%
Market-Watch			26,087,012		18.000%
Security-Detail			20,289,638		14.000%
Trade-Lookup			11,594,027		8.000%
Trade-Order			14,638,092		10.100%
Trade-Result			14,491,978		9.999%
Trade-Status			27,536,991		19.001%
Trade-Update			2,898,338		2.000%
Data-Maintenance			120		N/A
<b>Test Duration and Timing</b>					
Ramp-up Time (hh:mm:ss)			0:53:25		
Measurement Interval (hh:mm:ss)			2:00:00		
Business Recovery Time (hh:mm:ss)			1:11:57		
Total Number of Transactions Completed in Measurement Interval			144,927,546		