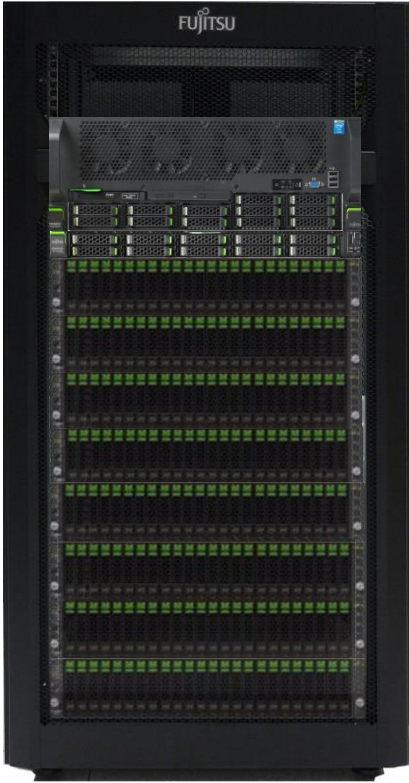
		FUJITSU Server PRIMERGY RX4770 M3		TPC-E 1.14.0 TPC Pricing 2.0.0		
				Report Date July 12, 2016		
TPC-E Throughput 8,796.47 tpsE	Price/Performance \$ 116.62 USD per tpsE	Availability Date July 31, 2016	Total System Cost \$ 1,025,815 USD			
Database Server Configuration						
Operating System Microsoft Windows Server 2012 R2 Standard Edition	Database Manager Microsoft SQL Server 2016 Enterprise Edition	Processors/Cores/Threads 4/96/192	Memory 2048 GB			
						
<table border="1" style="width: 100%;"> <tr> <td style="width: 60%; vertical-align: top;"> <p>Tier A PRIMERGY RX2530 M1 2x Intel Xeon E5-2697 v3 2.60 GHz 64 GB Memory 2x 300 GB 15k rpm SAS Drive 2x onboard LAN 10 Gb/s 1x Dual Port LAN 1 Gb/s 1x SAS RAID controller</p> <p>Tier B PRIMERGY RX4770 M3 4x Intel Xeon E7-8890 v4 2.20 GHz 2048 GB Memory 2x 300 GB 15k rpm SAS Drives 6x 600 GB 15k rpm SAS Drives 2x onboard LAN 10 Gb/s 8x SAS RAID Controller</p> <p>Storage 1x PRIMECENTER Rack 7x ETERNUS JX40 S2 168x 400 GB SSD Drives</p> </td> <td style="width: 40%;"></td> </tr> </table>					<p>Tier A PRIMERGY RX2530 M1 2x Intel Xeon E5-2697 v3 2.60 GHz 64 GB Memory 2x 300 GB 15k rpm SAS Drive 2x onboard LAN 10 Gb/s 1x Dual Port LAN 1 Gb/s 1x SAS RAID controller</p> <p>Tier B PRIMERGY RX4770 M3 4x Intel Xeon E7-8890 v4 2.20 GHz 2048 GB Memory 2x 300 GB 15k rpm SAS Drives 6x 600 GB 15k rpm SAS Drives 2x onboard LAN 10 Gb/s 8x SAS RAID Controller</p> <p>Storage 1x PRIMECENTER Rack 7x ETERNUS JX40 S2 168x 400 GB SSD Drives</p>	
<p>Tier A PRIMERGY RX2530 M1 2x Intel Xeon E5-2697 v3 2.60 GHz 64 GB Memory 2x 300 GB 15k rpm SAS Drive 2x onboard LAN 10 Gb/s 1x Dual Port LAN 1 Gb/s 1x SAS RAID controller</p> <p>Tier B PRIMERGY RX4770 M3 4x Intel Xeon E7-8890 v4 2.20 GHz 2048 GB Memory 2x 300 GB 15k rpm SAS Drives 6x 600 GB 15k rpm SAS Drives 2x onboard LAN 10 Gb/s 8x SAS RAID Controller</p> <p>Storage 1x PRIMECENTER Rack 7x ETERNUS JX40 S2 168x 400 GB SSD Drives</p>						
Initial Database Size 36,951 GB	Redundancy Level 1 RAID-5 data and RAID-10 log	Storage 168 x 400 GB SSD 6 x 600 GB 15k rpm HDD				



FUJITSU Server PRIMERGY RX4770 M3

**TPC-E 1.14.0
TPC Pricing 2.0.0**

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Description	Part Number	Price Source	Unit Price	Qty	Extended Price	3-yr. Maint. Price
Database Server (Tier B) Hardware			\$		\$	\$
PRIMERGY RX4770 M3						
PY RX4770 M3	S26361-K1504-V200	1	5,970.00	1	5,970.00	
Power Supply Module 1600W w/o power cord	S26113-F5295-E160	1	483.00	2	966.00	
Cable powercord (USA), 1.8m, grey	T26139-Y1742-E10	1	13.00	2	26.00	
Intel Xeon E7-8890v4 24C/48T 2.20GHz	S26361-F3896-E490	1	11,727.00	4	46,908.00	
Memory Board RX4770 M2	S26361-F5295-E200	1	623.00	6	3,738.00	
64GB (2x32GB) 2Rx4 DDR4-2400 R ECC	S26361-F3898-E642	1	1,435.00	32	45,920.00	
Memory Independent Mode Installation	S26361-F5295-E4	1	7.00	1	7.00	
HD SAS 12G 300GB 15K HOT PL 2.5' EP	S26361-F5531-E530	1	545.00	2	1,090.00	
HD SAS 12G 600GB 15K HOT PL 2.5' EP	S26361-F5531-E560	1	942.00	6	5,652.00	
PRAID EP400i	S26361-F5243-E1	1	454.00	1	454.00	
PRAID EP420e FH	S26361-F3847-E2	1	735.00	7	5,145.00	
Rack Mount Kit F2-C LV	S26361-F2735-E285	1	119.00	1	119.00	
Mounting of RMK in symmetrical racks	S26361-F4530-E10	1	2.00	1	2.00	
region-kit America	S26361-F1452-E130	1	13.00	1	13.00	
PYRX4770 Series during normal business hours, Primergy Installation, Mdrange Server, w/o OS, One Time billing	PYR477-N038005-ONA	1	350.00	1		350.00
PYRX4770 Series Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7 4hr Onsite, Prepaid billing	PYR477_S26361-K1484-V200	1	1,309.00	1		1,309.00
Subtotal (*)					116,010	1,659
Storage						
PRIMECENTER RACK						
PRIMECENTER M1 Rack 724S 24U-1050x700	S26361-K827-V220	1	2,704.00	1	2,704.00	
Dummy panel, plastics, 1U + assembly	S26361-F4530-L131	1	17.00	3	51.00	
Dummy panel, plastics, 2U + assembly	S26361-F4530-L132	1	23.00	2	46.00	
Socket strip 8x IEC320 + IEC319 plug 32A	S26361-F2262-L45	1	326.00	2	652.00	
PYPRIMECENTER during normal business hours, PRIMERGY Installation, Racks, One Time billing	PYPCTR-N076005-ONA	1	265.00	1		265.00
PYPRIMECENTER Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7 4hr Onsite, Prepaid billing (PYPCTR-U004361-ONA)	PYPCTR-U004361-ONA	1	540.00	1		540.00
ETERNUS JX40						
ETERNUS JX40 S2 Enclosure w 1x IOM	FTS:ETJEADU		2,234.00	7	15,638.00	
JX40 S2 MLC SSD 400GB	FTS:ETJ4SA4	1	2,032.00	168	341,376.00	
MiniSAS-HD cable1.1m	FTS:ETJ4KM11-L	1	73.00	7	511.00	
PYJX40 Warranty Uplift, 24 Months, Enhanced Plus Level, 24x7x365 Phone Support (Sev1 - Live Transfer), 24x7x365 Onsite and Parts (Sev1 Resp. Time - 4 Hours), Incl. Holidays, Prepaid billing	PYJX40-U004121-ONA	1	1,218.00	7		8,526.00
PYJX40 Post Warranty, 12 Months, Enhanced Plus Level, 24x7x365 Phone Support (Sev1 - Live Transfer), 24x7x365 Onsite and Parts (Sev1 Resp. Time - 4 Hours), Incl. Holidays, Prepaid billing	PYJX40-P004241-ONA	1	950.00	7		6,650.00
PYJX40 during normal business hours, Primergy storage installation, One Time billing	PYJX40-N043005-ONA	1	450.00	7		3,150.00
Subtotal(*)					360,978	19,131



FUJITSU Server PRIMERGY RX4770 M3

**TPC-E 1.14.0
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Database Server (Tier B) Software						
SQL Server 2016 Enterprise Edition 2 Core License	7JQ-00256	2	13,472.50	48	646,680.00	
Microsoft Windows Server 2012 R2 Standard Edition 2 Processor License	P72-06284	2	735.00	2	1,470.00	
Microsoft Problem Resolution Services	n/a	2	259.00	1		259.00
				Subtotal	648,150	259
Application Server (Tier A) Hardware						
PRIMERGY RX2530 M1						
PY RX2530 M1 4x 2.5" expandable	S26361-K1492-V301	1	1,227.00	1	1,227.00	
Modular PSU 450W platinum hp	S26113-F575-E13	1	292.00	2	584.00	
Cable power cord rack, 4m, grey	T26139-Y1968-E100	1	13.00	2	26.00	
Cool-safe Advanced Thermal Design	S26361-F3776-E101	1	4.00	1	4.00	
Intel Xeon E5-2697v3 14C/28T 2.60 GHz	S26361-F3849-E197	1	4,072.00	2	8,144.00	
Cooler Kit 2nd CPU	S26361-F3849-E100	1	35.00	1	35.00	
8GB (1x8GB) 2Rx8 DDR4-2133 R ECC	S26361-F3843-E515	1	202.00	8	1,616.00	
Performance Mode Installation	S26361-F3694-E2	1	7.00	2	14.00	
DVD ROM UltralSlim	S26361-F3718-E2	1	104.00	1	104.00	
HD SAS 12G 300GB 15K HOT PL 2.5" EP	S26361-F5531-E530	1	545.00	2	1,090.00	
PRAID EP400i	S26361-F5243-E1	1	454.00	1	454.00	
PLAN EM 2x10Gb T OC14000-LOM interface	S26361-F5302-E210	1	640.00	1	640.00	
PLAN CP 2x1Gbit Cu Intel I350-T2 LP	S26361-F4610-E202	1	264.00	1	264.00	
Rack Mount Kit F1-CMA Slim Line	S26361-F2735-E400	1	92.00	1	92.00	
Mounting of RMK in symmetrical racks	S26361-F4530-E10	1	7.00	1	7.00	
region-kit America	S26361-F1452-E130	1	13.00	1	13.00	
PYRX2530 M1 during normal business hours, Primergy Installation, Midrange Server, w/o OS, One Time billing	PYR253-N038005-ONA	1	350.00	1		350.00
PYRX2530 M1 Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7 4hr Onsite, Prepaid billing	PYR253_S26361-K1492-V301	1	931.00	1		931.00
				Subtotal(*)	14,314	1,281
Application Server (Tier A) Software						
Microsoft Windows Server 2012 R2 Standard Edition 2 Processor License	P72-06284	2	735.00	1	735.00	
				Subtotal	735	
Miscellaneous						
Display E24T-7 LED, Cross Trade (incl 2spares)	S26361-K1543-V140	1	332.00	3	996.00	
Infrastructure or Connectivity						
KB900 Keyboard USB USA (incl 2 spares)	S26381-K560-L402	1	27.00	3	81.00	
Mouse MC200 (incl 2 spares)	S26381-K463-L100	1	16.00	3	48.00	
StarTech.com Shielded Cat6a Molded STP Patch Cable - patch cable - 7 ft - b (incl 2 spares)	C6ASPA7BL	3	12.99	4	51.96	
				Subtotal(*)	1,177	0
				Total	1,141,364	22,330
Dollar Volume Discount (see Notes)		28%	1		137,880	
					1,003,484	

Notes: Price Source: 1=FUJITSU, 2=Microsoft Corporation, 3=www.cdw.com Discount applies to all subtotal marked with (*). Pricing is for these or similar quantities. Discounts for similar sized configurations will be similar to what is quoted here, but may vary based on the specific components priced.	Three-Year Cost of Ownership USD	\$1,025,815
	TPC-E Throughput	8796.47
	\$ USD/tpsE	\$116.62

The benchmark results and test methodology were audited by Doug Johnson for InfoSizing Inc. (www.sizing.com)

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 section of the TPC benchmark pricing 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.



**FUJITSU Server
PRIMERGY RX4770 M3**

**TPC-E 1.14.0
TPC Pricing 2.0.0**

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Numerical Quantities Summary				
Reported Throughput:	8,796.47 tpsE	Configured Customers:		4,500,000
Response Times (in seconds)	Minimum	Average	90th%tile	Maximum
Broker Volume	0.01	0.01	0.02	1.08
Customer Position	0.01	0.01	0.01	0.24
Market Feed	0.01	0.01	0.04	1.41
Market Watch	0.01	0.01	0.02	0.21
Security Detail	0.01	0.01	0.01	0.20
Trade Lookup	0.01	0.04	0.07	0.66
Trade Order	0.01	0.02	0.03	1.08
Trade Result	0.01	0.02	0.04	1.08
Trade Status	0.01	0.01	0.01	1.06
Trade Update	0.01	0.05	0.08	1.14
Data Maintenance	0.01	0.01	N/A	0.04
Transaction Mix		Transaction Count		Mix %
Broker Volume		31,034,733		4.900%
Customer Position		82,336,641		13.000%
Market Feed		6,333,464		1.000%
Market Watch		114,004,688		18.000%
Security Detail		88,670,421		14.000%
Trade Lookup		50,668,499		8.000%
Trade Order		63,969,074		10.100%
Trade Result		63,334,591		10.000%
Trade Status		120,337,660		19.000%
Trade Update		12,666,991		2.000%
Data Maintenance		120		N/A
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)	0:20:13			
Measurement Interval (hh:mm:ss)	2:00:00			
Business Recovery Time (hh:mm:ss)	0:29:26			
Total Number of Transactions Completed	633,356,762			