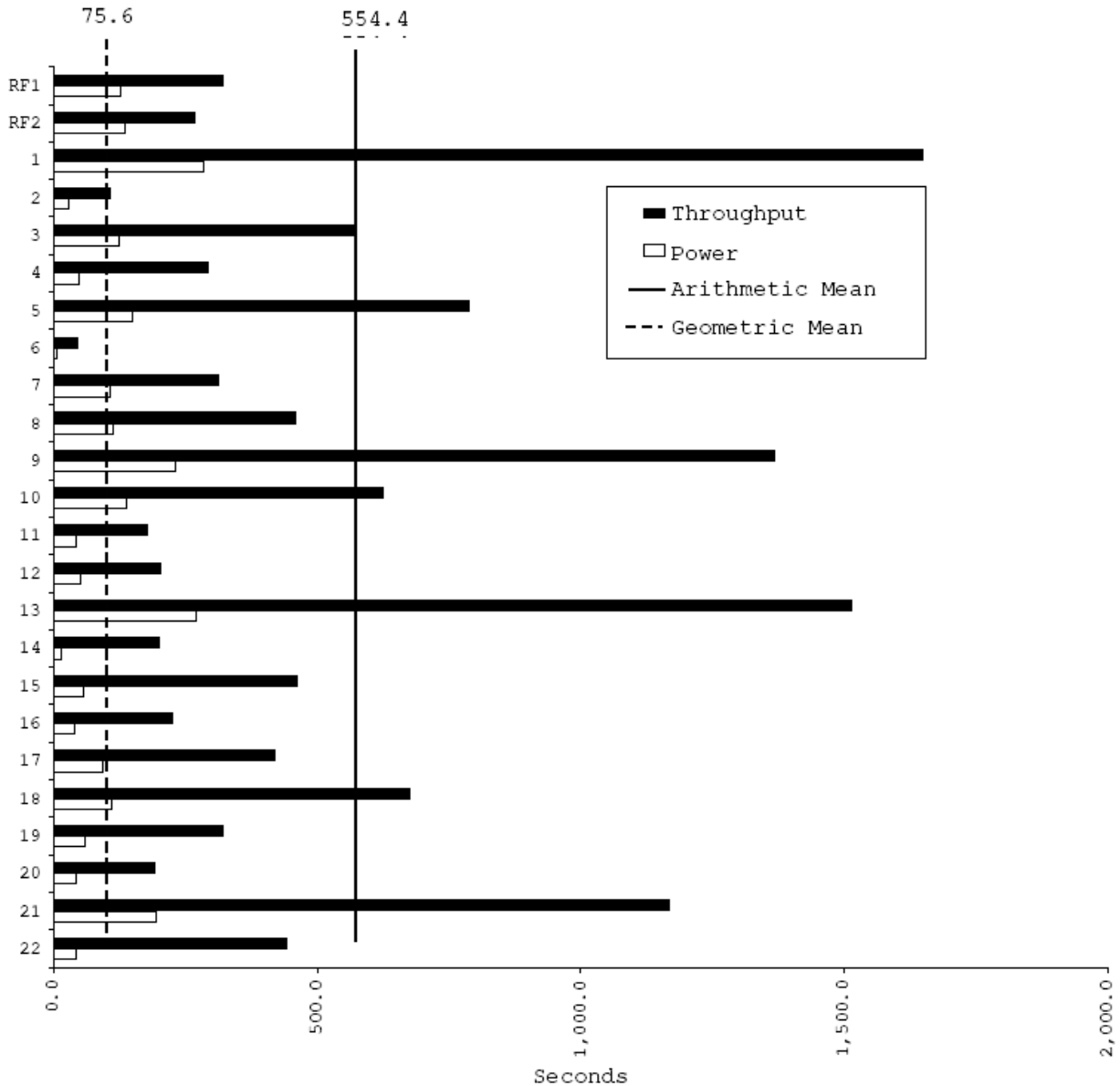


# IBM Power 595 Model 9119-FHA

TPC-H Rev. 2.8.0

**Report Date:**  
November 24, 2009

Total System Cost	Composite Query per Hour Rating			Price/Performance
3,224,000 USD	156,537.3 QphH@3000GB			20.60 USD Price/QphH@3000GB
Database Size	Database Manager	Operating System	Other Software	Availability Date
3000GB	Sybase IQ Single Application Server Edition v.15.1 ESD #1.2	AIX V6.1	None	Now



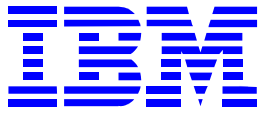
Database Load Time: 10:02:25	Load included backup: N	Total Data Storage/Database Size: 6.58
RAID (base tables): Y	RAID (Base Tables and Auxiliary Data Structures): Y	RAID (All): Y

**System Configurations**

**1 IBM Power 595 Model 9119-FHA**

- Processors**            64 5.0GHz POWER6 Cores with 32MB L3 Cache per chip
- Memory**                512GB
- Disk Controllers**    24 x 4Gigabit Fibre Channel PCI-E Adapters & 12 IBM TotalStorage DS4800 dual controllers
- Disk Drives**            288 x 73GB 15K 4Gb FC drives; 5 x 146.8GB SAS drives
- Total Disk Storage**    20,226.27 GB (GB is defined as 1024 \* 1024 \* 1024 bytes)





# IBM Power 595 Model 9119-FHA

TPC-H Rev. 2.8.0

Report Date:  
November 24, 2009

### Server Software

AIX 6.1 (media only)	5692-A6P	1	50	1	50	
AIX Software per Processor	5765-G62	1	2,495	64	159,680	
AIX IBM Management Edition for AIX	5765-AME	1	490	64	31,360	
AIX Software Maintenance (3Y)	73-SM3-474	1	2,836	64		181,504
AIX Software Maintenance 24x7 Upgrade (3Y)	73-SM3-476	1	732	64		46,848
AIX IBM Mgmt Edition of AIX Software Maintenance (373-AME-989		1	196	64		12,544
HMC Software SUB (3Y)	5773-0570	1	236	1		236
HMC Software Support (3Y)	5773-0569	1	675	1		675
C for AIX user Lic+SW maint 12 MO	D5A1DLL	1	975	1	975	
C for AIX user annual SW maint renewal	E1A1FLL	1	195	2		390

**Subtotal**                    **192,065**    **242,197**

### Third Party Hardware/Software

SybaseIQ15 ( 64 processors)		2	2,595	64	166,080	
Sybase IQ15 (64 processors, 3 years)		2	1,713	64		109,632

**Subtotal**                    **166,080**    **109,632**

**Total**                        **5,188,025**    **1,058,977**

**Total IBM Discounts\***                    **-2,981,645**

**Sybase Discount (15%)**                    **-41,357**

**Three-Year Cost of Ownership**    **3,224,000**

**QphH@3000GB**                    **156,537**

**\$/QphH@3000GB**                    **20.60**

**Notes:**

For pricing details and contact information please see appendix E

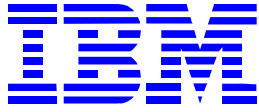
Pricing Sources: 1) IBM 2) Sybase

\*Discounts are based on US list prices for similar quantities & configurations including pre-payment for maintenance. The discount applies to the totality of all items with price source of \*1\*.

Audited by: Francois Raab of Infosizing (www.sizing.com)

The system as configured for the test is available Now.

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 base 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 the stated prices are not available according to these terms, please notify the TPC at pricing@tpc.org. Thank You.



# IBM Power 595 Model 9119-FHA

TPC-H Rev. 2.8.0

Report Date:  
November 24, 2009

## Numerical Quantities Summary

### Measurement Results

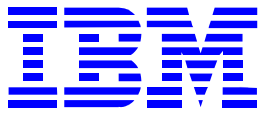
Database Scaling (SF/Size)	=	3000
Total Data Storage/Database Size	=	6.58
Start of Database Load	=	10/27/09 13:48:39
End of Database Load	=	10/27/09 23:51:04
Database Load Time	=	10:02:25
Query Streams for Throughput Test	=	9
TPC-H Power Metric (QppH@3000GB)	=	142,790.7
TPC-H Throughput Metric (QthH@3000GB)	=	171,607.4
Composite Query-per-Hour Rating (QphH@3000GB)	=	156,537.3
Total System Price over 3 years	=	3,224,000 USD
TPC-H Price/Performance Metric (\$/QphH@3000GB)	=	20.60 USD

### Measurement Intervals

Measurement Interval in Throughput Test (Ts) = 12,461 seconds

### Duration of Stream Execution

Stream ID	Seed Used	Date and Time Stamps						Duration
		Query Start		RF1 Start		RF2 Start		Queries
		Query End		RF1 End		RF2 End		RFs
Stream 00	1027235104	10/28/2009 07:21:48.311	10/28/2009 07:19:38.526	10/28/2009 07:59:16.489	00:37:19.179			
		10/28/2009 07:59:07.490	10/28/2009 07:21:45.390	10/28/2009 08:01:30.918	00:04:21.293			
Stream 01	1027235105	10/28/2009 08:01:31.123	10/28/2009 08:02:31.664	10/28/2009 08:07:41.693	03:21:51.692			
		10/28/2009 11:23:22.815	10/28/2009 08:07:41.079	10/28/2009 08:13:01.749	00:10:29.471			
Stream 02	1027235106	10/28/2009 08:01:31.605	10/28/2009 08:13:03.055	10/28/2009 08:36:05.651	03:25:33.290			
		10/28/2009 11:27:04.895	10/28/2009 08:18:34.126	10/28/2009 08:41:19.961	00:10:45.381			
Stream 03	1027235107	10/28/2009 08:01:31.572	10/28/2009 08:41:20.872	10/28/2009 08:45:53.532	03:18:38.186			
		10/28/2009 11:20:09.758	10/28/2009 08:45:52.902	10/28/2009 08:49:56.850	00:08:35.348			
Stream 04	1027235108	10/28/2009 08:01:31.167	10/28/2009 09:01:22.017	10/28/2009 09:06:55.081	03:19:38.196			
		10/28/2009 11:21:09.363	10/28/2009 09:06:54.570	10/28/2009 09:11:50.184	00:10:27.656			
Stream 05	1027235109	10/28/2009 08:01:31.631	10/28/2009 09:11:50.999	10/28/2009 09:30:06.207	03:21:40.793			
		10/28/2009 11:23:12.424	10/28/2009 09:17:57.633	10/28/2009 09:34:40.962	00:10:41.389			
Stream 06	1027235110	10/28/2009 08:01:31.190	10/28/2009 09:34:42.171	10/28/2009 09:46:02.247	03:24:10.787			
		10/28/2009 11:25:41.977	10/28/2009 09:40:05.915	10/28/2009 09:50:51.268	00:10:12.765			
Stream 07	1027235111	10/28/2009 08:01:31.601	10/28/2009 09:50:51.813	10/28/2009 10:02:03.096	03:26:00.751			
		10/28/2009 11:27:32.352	10/28/2009 09:56:25.916	10/28/2009 10:05:38.677	00:09:09.684			
Stream 08	1027235112	10/28/2009 08:01:31.191	10/28/2009 10:11:07.498	10/28/2009 10:16:22.189	03:24:21.676			
		10/28/2009 11:25:52.867	10/28/2009 10:16:21.588	10/28/2009 10:20:09.478	00:09:01.379			
Stream 09	1027235113	10/28/2009 08:01:31.557	10/28/2009 10:37:35.733	10/28/2009 10:42:47.146	03:27:39.591			
		10/28/2009 11:29:11.148	10/28/2009 10:42:46.485	10/28/2009 10:46:46.720	00:09:10.326			



# IBM Power 595 Model 9119-FHA

TPC-H Rev. 2.8.0

Report Date:  
November 24, 2009

## Timing Interval (in seconds)

Stream ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Stream 0	282.7	27.5	122.1	46.4	149.3	7.0	107.3	112.5	230.5	136.7	41.9	50.3
Stream 1	1,550.7	73.3	580.3	170.1	681.3	61.2	354.4	359.6	1,721.6	471.4	91.9	272.1
Stream 2	1,841.3	93.5	733.3	369.6	846.6	82.8	321.7	494.0	1,326.9	571.5	277.6	235.1
Stream 3	1,182.3	93.9	584.1	293.5	833.6	39.1	343.3	539.1	1,203.1	550.8	222.4	233.6
Stream 4	1,749.5	91.9	521.2	165.7	888.1	32.7	300.4	396.3	1,467.3	638.9	266.6	173.9
Stream 5	1,541.6	82.3	562.0	314.3	984.1	32.5	267.3	564.7	1,156.9	591.9	119.5	175.9
Stream 6	1,809.1	123.1	596.7	343.0	896.1	29.8	291.1	316.6	1,603.9	776.4	183.5	169.8
Stream 7	1,757.9	111.5	596.7	291.6	774.4	37.7	262.1	501.3	1,473.0	668.6	148.6	67.7
Stream 8	1,582.6	100.2	405.9	384.5	849.1	54.6	317.0	417.2	1,210.7	606.3	106.9	235.3
Stream 9	1,814.0	177.8	528.6	295.8	346.2	43.8	347.6	530.9	1,135.6	746.0	172.8	249.8
Minimum	1,182.3	73.3	405.9	165.7	346.2	29.8	262.1	316.6	1,135.6	471.4	91.9	67.7
Average	1,647.7	105.3	567.6	292.0	788.8	46.0	311.7	457.7	1,366.6	624.6	176.6	201.5
Maximum	1,841.3	177.8	733.3	384.5	984.1	82.8	354.4	564.7	1,721.6	776.4	277.6	272.1
Stream ID	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 0	269.9	14.3	55.7	40.3	94.1	111.0	60.3	42.5	193.5	43.5	126.9	134.4
Stream 1	1,472.5	251.3	496.7	247.0	287.7	725.4	268.8	237.5	1,422.0	314.9	309.4	320.1
Stream 2	1,458.9	189.1	487.4	249.9	354.6	711.0	342.4	219.7	628.4	498.2	331.1	314.3
Stream 3	1,479.8	178.5	560.1	271.7	243.3	904.0	183.8	165.1	1,377.1	436.1	272.0	243.3
Stream 4	1,424.1	192.3	374.3	267.4	280.3	581.6	198.3	214.8	1,208.8	543.8	332.6	295.1
Stream 5	1,560.1	386.9	474.0	192.3	238.8	676.3	218.8	228.3	1,366.0	366.4	366.6	274.8
Stream 6	1,308.9	154.7	462.8	222.8	488.6	587.8	215.0	174.4	882.5	614.3	323.7	289.0
Stream 7	1,695.4	104.3	204.9	194.1	249.5	760.6	866.4	183.7	1,154.4	256.2	334.1	215.6
Stream 8	1,556.1	218.2	584.7	325.1	775.7	520.7	361.9	153.2	1,185.5	310.2	314.1	227.3
Stream 9	1,661.6	113.3	495.6	42.1	841.8	617.4	226.8	148.1	1,287.4	636.7	310.8	239.6
Minimum	1,308.9	104.3	204.9	42.1	238.8	520.7	183.8	148.1	628.4	256.2	272.0	215.6
Average	1,513.0	198.7	460.1	223.6	417.8	676.1	320.2	191.6	1,168.0	441.9	321.6	268.8
Maximum	1,695.4	386.9	584.7	325.1	841.8	904.0	866.4	237.5	1,422.0	636.7	366.6	320.1