



IBM Power Systems
Performance Report Archive – Aug 2008

POWER5 and Beyond

August 28, 2008

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Performance of IBM UNIX, IBM i and Linux Operating System Servers

June 16, 2008

This document contains performance and benchmark results for IBM servers and workstations running the UNIX® (AIX®), IBM i and Linux® operating systems. This includes the IBM Power™ Systems servers (System p™, System p5™, eServer™ p5, pSeries®, OpenPower® and IBM RS/6000®; BladeCenter® Power Architecture® technology-based blades) and IntelliStation® POWER™ workstations.

This document contains the IBM Power 595 server TPC-C benchmark result, new Power 570 SPECjbb2005 results, a Power 550 Linux TPC-C result and Power 575 Linux benchmark results. Also included are SPECjbb2005 results run using IBM i and SAP SD 3-tier results run using the BladeCenter JS12 and AIX. Finally new results for ABAQUS, NAMD, and WRF are included.

Section One of this report includes the SPEC CPU2006 and LINPACK results. SPEC CPU2000 results are presented in Section 1a.

Section Two is multiuser performance. The rPerf and SPEC_rate2006 are presented in this section. Multiuser Performance of SPEC CPU2000 along with rPerf and SPECweb99 are presented in Section 2a. Multiuser performance using AIX® V5.2 is presented in Section 2b. The SPECweb99_SSL results are presented in Section 2c. Capacity Upgrade on Demand relative performance guidelines are presented in Section 2d. Section 2e of this report includes CPW benchmark information provided for new POWER6 processor-based servers running the IBM i operating system.

Section Three presents the TPC-C version 5 results. The version 3 results are included in Section 3a. Starting April 20, 2001, TPC-C will not accept version 3 results. TPC-C version 3 results can not be compared to version 5 results. Section Four provides published TPC-H results.

Section Five reflects the published SPECsfs97 benchmark results. The NotesBench results to date are presented in Section 5a.

Section Six reflects the published SPECjvm98, SPECjbb2000 and SPECjbb2005 Java™ benchmarks.

Section Seven reflects the published ECperf benchmarks.

Sections Eight through Fourteen include published application performance benchmarks for SAP, PeopleSoft, Oracle Applications, Baan, J.D. Edwards, Seibel, Sybase and Manugistics.

Section Fifteen contains technical computing benchmark results for UNIX operating system-based systems. This includes STREAM, SPEC OMP2001, FLUENT, ABAQUS, AVL FIRE, LS-DYNA, ANSYS, CHARMM, Gaussian98, Focus, STAR-CD and MSC.Nastran benchmark results.

Section Sixteen contains Linux operating system performance results.

Section Seventeen is a historical list of commercial performance estimates for IBM System p™, RS/6000 models and RS/6000 SP™ nodes that have been withdrawn from marketing. IBM has discontinued Relative OLTP results.

All performance measurements for the IBM System p, IBM System p5, IBM eServer p5, IBM eServer pSeries, IBM RS/6000 servers, IntelliStation POWER workstations and BladeCenter blades were made with systems running the AIX operating system unless otherwise indicated to have used Linux. For new and upgraded systems, AIX Version 4.3 or AIX 5L™ were used. All other systems used previous versions of AIX.

Footnotes used in following tables:

- System has been announced as withdrawn from marketing; * - Submitted to SPEC, waiting review; e – estimate; n – new; u – upgrade; N/A - not available; P5 – IBM POWER5™; P5+ – IBM POWER5+™; P6 – IBM POWER6™; IS – IntelliStation, OP – OpenPower, PPC – PowerPC®

Changes from last version are highlighted in yellow.

Section 1 - AIX SPEC CPU2006 Performance

Model	Processor / # Cores	MHz	L1	L2/L3	SPEC	SPEC	SPEC	SPEC
			Cache (KB)	Cache (MB)	int 2006	int_ base 2006	fp 2006	fp_ base 2006
520	P6/1	4200	64/64	8/-	--	--	--	--
520	P6/4	4200	64/64	16/-	--	--	--	--
550	P6/1	4200	64/64	8/32	--	--	--	--
550	P6/8	4200	64/64	32/128	--	--	--	--
570	P6/1	4700	64/64	8/32	21.6	17.8	22.3	18.7
570	P6/4	4700	64/64	16/64	--	--	--	--
570	P6/8	4700	64/64	32/128	--	--	--	--
570	P6/16	4700	64/64	64/256	--	--	--	--
575	P6/1	4700	64/64	32/128	--	--	--	--
575	P6/32	4700	64/64	128/512	--	--	--	--
595	P6/1	5000	64/64	32/128	--	--	24.9	20.1
595	P6/64	5000	64/64	256/1024	--	--	--	--

Section 1a - AIX SPEC CPU2000 Performance

Model	Processor / # Cores	MHz	L1	L2/L3	SPEC	SPEC	SPEC	SPEC
			Cache (KB)	Cache (MB)	int 2000	int_ base 2000	fp 2000	fp_ base 2000
JS20	PPC970/1	2200	64/32	0.5/-	1,040	986	1,241	1,178
JS20	PPC970/2	2200	64/32	1.0/-	--	--	--	--
JS21	PPC970+/1	2500	64/32	1.0/-	1,587	1,509	2,119	1,936
JS21	PPC970+/4	2500	64/32	4.0/-	--	--	--	--
JS21	PPC970+/1	2700	64/32	1.0/-	1,706	1,623	2,259	2,060
JS21	PPC970+/2	2700	64/32	2.0/-	--	--	--	--
#IS-285	P5+/1	1900	64/32	1.9/36	1,512	1,469	3,027	2,838
#IS-285	P5+/2	1900	64/32	1.9/36	--	--	--	--
IS-285	P5+/1	2100	64/32	1.9/36	1,747	1,670	3,324	3,100
IS-285	P5+/2	2100	64/32	1.9/36	--	--	--	--
#p5-505	P5/1	1650	64/32	1.9/0	1,297	1,259	2,528	2,390
#p5-505	P5/2	1650	64/32	1.9/36	--	--	--	--
p5-505	P5+/1	2100	64/32	1.9/36	1,704	1,617	3,301	3,057
p5-505Q	P5+/1	1650	64/32	1.9/72	1,371	1,311	2,610	2,442
#p5-510	P5/1	1650	64/32	1.9/36	1,260	1,203	2,236	2,071
#p5-510	P5/2	1650	64/32	1.9/36	--	--	--	--
#p5-510	P5+/1	1900	64/32	1.9/36	1,536	1,479	3,048	2,850
p5-510	P5+/1	2100	64/32	1.9/36	1,704	1,617	3,301	3,057
#p5-510Q	P5+/1	1500	64/32	1.9/72	1,231	1,164	2,377	2,217
p5-510Q	P5+/1	1650	64/32	1.9/72	1,371	1,311	2,610	2,442
#p5-520	P5/1	1500	64/32	1.9/0	--	--	2,041	1,909
#p5-520	P5/2	1500	64/32	1.9/36	--	--	--	--
#p5-520	P5/1	1650	64/32	1.9/36	1,248	1,201	2,138	2,034
#p5-520	P5/2	1650	64/32	1.9/36	--	--	--	--
#p5-520	P5+/1	1650	64/32	1.9/0	1,337	1,288	2,676	2,502
#p5-520	P5+/1	1900	64/32	1.9/36	1,513	1,470	3,030	2,839
#p5-520	P5+/2	1900	64/32	1.9/36	--	--	--	--
p5-520	P5+/1	2100	64/32	1.9/36	1,704	1,617	3,301	3,057
p5-520Q	P5+/1	1650	64/32	1.9/72	1,371	1,311	2,610	2,442
#p5-550	P5/1	1500	64/32	3.8/72	--	--	2,072	1,914
#p5-550	P5/4	1500	64/32	3.8/72	--	--	--	--

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	SPEC int 2000	SPEC	SPEC	SPEC
						int_ base 2000	fp 2000	fp_ base 2000
#p5-550	P5/1	1650	64/32	1.9/36	1,248	1,200	2,221	2,121
#p5-550	P5/4	1650	64/32	3.8/72	--	--	--	--
#p5-550	P5+/1	1650	64/32	1.9/36	1,336	1,288	2,657	2,483
p5-550	P5+/1	1900	64/32	1.9/36	1,510	1,467	3,007	2,815
p5-550	P5+/4	1900	64/32	3.8/72	--	--	--	--
p5-550	P5+/1	2100	64/32	1.9/36	1,743	1,669	3,321	3,125
p5-550	P5+/4	2100	64/32	3.8/72	--	--	4,051	3,210
#p5-550Q	P5+/1	1500	64/32	1.9/72	1,187	1,156	2,263	2,179
#p5-550Q	P5+/8	1500	64/32	7.6/144	--	--	--	--
p5-550Q	P5+/1	1650	64/32	1.9/72	1,367	1,307	2,612	2,458
p5-550Q	P5+/8	1650	64/32	7.6/144	--	--	--	--
p5-560Q	P5+/1	1500	64/32	1.9/72	1,204	1,160	2,360	2,197
p5-560Q	P5+/16	1500	64/32	15.2/288	--	--	--	--
p5-560Q	P5+/1	1800	64/32	1.9/72	--	--	--	--
p5-560Q	P5+/16	1800	64/32	15.2/288	--	--	--	--
#p5-570	P5/1	1900	64/32	1.9/36	1,452	1,398	2,702	2,576
#p5-570	P5/4	1900	64/32	3.8/72	--	--	--	--
#p5-570	P5/8	1900	64/32	7.6/144	--	--	--	--
#p5-570	P5/16	1900	64/32	15.2/288	--	--	--	--
#p5-575	P5/1	1500	64/32	1.9/36	1,143	1,087	2,185	2,050
#p5-575	P5/16	1500	64/32	15.2/288	--	--	--	--
#p5-575	P5/1	1900	64/32	1.9/36	1,456	1,385	2,600	2,413
#p5-575	P5/8	1900	64/32	15.2/288	--	--	--	--
p5-575	P5+/1	1900	64/32	1.9/36	1,526	1,473	3,042	2,830
p5-575	P5+/16	1900	64/32	15.2/288	--	--	--	--
p5-575	P5+/1	2200	64/32	1.9/36	1,765	1,705	3,513	3,271
p5-575	P5+/8	2200	64/32	15.2/288	--	--	--	--
#p5-590	P5/1	1650	64/32	1.9/144	1,259	1,200	2,450	2,276
#p5-590	P5/32	1650	64/32	30.4/576	--	--	--	--
#p5-595	P5/1	1900	64/32	1.9/144	1,452	1,392	2,796	2,585
#p5-595	P5/64	1900	64/32	60.8/1152	--	--	--	--
p5-595	P5+/1	2300	64/32	1.9/144	1,900	1,820	3,642	3,369

Section 2 - AIX Multiuser Performance (rPerf, SPEC CPU2006)

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	rPerf	SPEC	SPEC	SPEC	SPEC
						int_ rate 2006	int_ rate_ base 2006	fp_ rate 2006	fp_ rate_ base 2006
JS12	P6/2	3800	64/64	16/-	14.71	--	--	--	--
JS22	P6/4	4000	64/64	16/-	30.26	84.7	77.8	75.6	67.8
520	P6/1	4200	64/64	8/-	8.39	--	--	--	--
520	P6/2	4200	64/64	8/-	15.95	--	--	--	--
520	P6/4	4200	64/64	16/-	31.48	90.6	82.3	80.8	71.4
550	P6/2	3500	64/64	8/32	15.85	--	--	--	--
550	P6/4	3500	64/64	16/64	31.27	--	--	--	--
550	P6/6	3500	64/64	24/96	45.04	--	--	--	--
550	P6/8	3500	64/64	32/128	58.80	179	152	154	135
550	P6/2	4200	64/64	8/32	18.38	--	--	--	--
550	P6/4	4200	64/64	16/64	36.28	--	--	--	--
550	P6/6	4200	64/64	24/96	52.24	--	--	--	--
550	P6/8	4200	64/64	32/128	68.20	212	179	178	156

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	rPerf	SPEC	SPEC	SPEC	SPEC
						int_ rate_ base 2006	int_ rate_ base 2006	fp_ rate_ base 2006	fp_ rate_ base 2006
570	P6/2	3500	64/64	8/32	15.85	--	--	--	--
570	P6/4	3500	64/64	16/64	31.69	--	--	--	--
570	P6/8	3500	64/64	32/128	58.95	--	--	--	--
570	P6/12	3500	64/64	48/192	83.35	--	--	--	--
570	P6/16	3500	64/64	64/256	105.75	--	--	--	--
570	P6/2	4200	64/64	8/32	18.38	--	--	--	--
570	P6/4	4200	64/64	16/64	36.76	--	--	--	--
570	P6/8	4200	64/64	32/128	68.38	--	--	--	--
570	P6/12	4200	64/64	48/192	96.68	--	--	--	--
570	P6/16	4200	64/64	64/256	122.67	--	--	--	--
570	P6/2	4700	64/64	8/32	20.13	60.9	53.2	58.0	51.5
570	P6/4	4700	64/64	16/64	40.26	122	106	115	102
570	P6/8	4700	64/64	32/128	74.89	240	206	213	189
570	P6/12	4700	64/64	48/192	105.89	--	--	--	--
570	P6/16	4700	64/64	64/256	134.35	478	410	426	379
575	P6/32	4700	64/64	128/512	--	934	812	839	730
595	P6/8	4200	64/64	32/128	75.58	--	--	--	--
595	P6/16	4200	64/64	64/256	142.90	--	--	--	--
595	P6/32	4200	64/64	128/512	266.51	--	--	--	--
595	P6/48	4200	64/64	192/768	373.60	--	--	--	--
595	P6/64	4200	64/64	256/1024	479.89	1650	1420	--	--
595	P6/8	5000	64/64	32/128	87.10	--	--	--	--
595	P6/16	5000	64/64	64/256	164.67	--	--	--	--
595	P6/32	5000	64/64	128/512	307.12	--	--	--	--
595	P6/48	5000	64/64	192/768	430.53	--	--	--	--
595	P6/64	5000	64/64	256/1024	553.01	2083	1822	2108	1822

Section 2a - AIX Multiuser Performance (rPerf, SPEC CPU2000, SPECweb99)

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	rPerf	SPEC	SPEC	SPEC	SPEC	SPEC web99
						int_ rate_ base 2000	int_ rate_ base 2000	fp_ rate_ base 2000	fp_ rate_ base 2000	
JS20	PPC970/1	1600	64/32	0.5/-	1.53	--	--	--	--	--
JS20	PPC970/2	1600	64/32	1.0/-	2.65	--	--	--	--	--
JS20	PPC970/1	2200	64/32	0.5/-	1.95	--	--	--	--	--
JS20	PPC970/2	2200	64/32	1.0/-	3.40	21.5	20.2	20.0	19.2	--
JS21	PPC970+/2	2700	64/32	2.0/-	5.31	38.5	36.6	43.9	40.9	--
JS21	PPC970+/4	2500	64/32	4.0/-	8.72	67.5	64.2	58.8	56.1	--
JS21	PPC970+/4	2300	64/32	4.0/-	8.15	--	--	--	--	--
#IS-285	P5+/2	1900	64/32	1.9/36	--	39.6	38.8	67.6	65.4	--
IS-285	P5+/2	2100	64/32	1.9/36	--	45.0	43.9	72.9	70.0	--
#p5-505	P5/2	1500	64/32	1.9/36	9.13	--	--	--	--	--
#p5-505	P5/1	1650	64/32	1.9/0	3.51	--	--	--	--	--
#p5-505	P5/2	1650	64/32	1.9/36	9.86	34.1	33.5	59.4	57.0	--
p5-505	P5+/1	1900	64/32	1.9/0	4.10	--	--	--	--	--
p5-505	P5+/2	1900	64/32	1.9/36	11.49	--	--	--	--	--
p5-505	P5+/2	2100	64/32	1.9/36	12.46	44.6	43.4	73.4	71.6	--
p5-505Q	P5+/4	1650	64/32	1.9/72	20.25	70.0	68.6	100	97.2	--
#p5-510	P5/1	1500	64/32	1.9/0	3.25	--	--	--	--	--

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	rPerf	SPEC	SPEC	SPEC	SPEC web99	
						int_ rate_ 2000	int_ rate_ base 2000	fp_ rate_ 2000		
#p5-510	P5/2	1500	64/32	1.9/36	9.13	--	--	--	--	--
#p5-510	P5/1	1650	64/32	1.9/36	5.24	--	--	--	--	--
#p5-510	P5/2	1650	64/32	1.9/36	9.86	33.0	31.6	43.2	41.5	--
#p5-510	P5+/1	1900	64/32	1.9/36	6.11	--	--	--	--	--
#p5-510	P5+/2	1900	64/32	1.9/36	11.49	39.9	39.4	67.1	65.9	--
p5-510	P5+/1	2100	64/32	1.9/36	6.63	--	--	--	--	--
p5-510	P5+/2	2100	64/32	1.9/36	12.46	44.6	43.4	73.4	71.6	--
#p5-510Q	P5+/4	1500	64/32	1.9/72	18.75	63.0	61.4	95.5	89.8	--
p5-510Q	P5+/4	1650	64/32	1.9/72	20.25	70.0	68.6	100	97.2	--
#p5-520	P5/1	1500	64/32	1.9/0	3.25	--	--	--	--	--
#p5-520	P5/2	1500	64/32	1.9/36	9.13	--	--	40.0	38.7	--
#p5-520	P5/2	1650	64/32	1.9/36	9.86	32.9	30.3	43.0	41.5	--
#p5-520	P5+/1	1650	64/32	1.9/0	3.62	--	--	--	--	--
#p5-520	P5+/2	1650	64/32	1.9/36	10.15	34.8	34.4	61.5	59.0	--
#p5-520	P5+/2	1900	64/32	1.9/36	11.16	39.6	38.9	67.6	65.4	--
p5-520	P5+/1	2100	64/32	1.9/36	6.63	--	--	--	--	--
p5-520	P5+/2	2100	64/32	1.9/36	12.46	44.6	43.4	73.4	71.6	--
#p5-520Q	P5+/4	1500	64/32	1.9/72	18.75	63.0	61.4	95.5	89.8	--
p5-520Q	P5+/4	1650	64/32	1.9/72	20.25	70.0	68.6	100	97.2	--
#p5-550	P5/1	1500	64/32	1.9/0	3.25	--	--	--	--	--
#p5-550	P5/2	1500	64/32	1.9/36	9.13	--	--	--	--	--
#p5-550	P5/4	1500	64/32	3.8/72	18.20	--	--	80.6	77.4	--
#p5-550	P5/2	1650	64/32	1.9/36	9.86	--	--	--	--	--
#p5-550	P5/4	1650	64/32	3.8/72	19.66	65.5	60.4	84.8	82.1	--
#p5-550	P5+/2	1650	64/32	1.9/36	10.15	--	--	--	--	--
#p5-550	P5+/4	1650	64/32	3.8/72	20.25	69.0	68.1	119	117	--
p5-550	P5+/2	1900	64/32	1.9/36	11.16	--	--	--	--	--
p5-550	P5+/4	1900	64/32	3.8/72	22.26	78.5	77.1	133	129	--
p5-550	P5+/2	2100	64/32	1.9/36	12.46	--	--	--	--	--
p5-550	P5+/4	2100	64/32	3.8/72	24.86	90.0	87.5	149	139	--
#p5-550Q	P5+/4	1500	64/32	3.8/72	18.20	--	--	--	--	--
#p5-550Q	P5+/8	1500	64/32	7.6/144	34.46	124	122	178	174	--
p5-550Q	P5+/4	1650	64/32	3.8/72	20.25	--	--	--	--	--
p5-550Q	P5+/8	1650	64/32	7.6/144	38.34	140	137	202	189	--
#p5-560Q	P5+/4	1500	64/32	3.8/72	18.75	--	--	--	--	--
#p5-560Q	P5+/8	1500	64/32	7.6/144	35.50	--	--	--	--	--
#p5-560Q	P5+/16	1500	64/32	7.6/288	65.24	248	243	368	360	--
p5-560Q	P5+/4	1800	64/32	3.8/72	21.72	--	--	--	--	--
p5-560Q	P5+/8	1800	64/32	7.6/144	41.12	--	--	--	--	--
p5-560Q	P5+/16	1800	64/32	7.6/288	75.58	--	;;	--	--	--
#p5-570	P5/2	1500	64/32	1.9/36	9.13	--	--	--	--	--
#p5-570	P5/4	1500	64/32	3.8/72	18.20	--	--	--	--	--
#p5-570	P5/8	1500	64/32	7.6/144	34.46	--	--	--	--	--
#p5-570	P5/2	1650	64/32	1.9/36	9.86	--	--	--	--	--
#p5-570	P5/4	1650	64/32	3.8/72	19.66	--	--	--	--	--
#p5-570	P5/8	1650	64/32	7.6/144	37.22	--	--	--	--	--
#p5-570	P5/12	1650	64/32	11.4/216	53.43	--	--	--	--	--
#p5-570	P5/16	1650	64/32	15.2/288	68.40	--	--	--	--	--
#p5-570	P5/2	1900	64/32	1.9/36	11.16	--	--	--	--	--
#p5-570	P5/4	1900	64/32	3.8/72	22.26	76.3	74.4	130	125	--
#p5-570	P5/8	1900	64/32	7.6/144	42.14	147	141	249	241	--
#p5-570	P5/12	1900	64/32	11.4/216	60.50	--	--	--	--	--

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	rPerf	SPEC	SPEC	SPEC	SPEC	SPEC web99
						int_ rate 2000	int_ rate_ base 2000	fp_ rate 2000	fp_ rate_ base 2000	
#p5-570	P5/16	1900	64/32	15.2/288	77.45	294	273	460	438	--
p5-570	P5+/2	1900	64/32	1.9/36	12.27	--	--	--	--	--
p5-570	P5+/4	1900	64/32	3.8/72	24.48	--	--	--	--	--
p5-570	P5+/8	1900	64/32	7.6/144	46.36	--	--	--	--	--
p5-570	P5+/12	1900	64/32	11.4/216	66.55	--	--	--	--	--
p5-570	P5+/16	1900	64/32	15.2/288	85.20	--	--	--	--	--
p5-570	P5+2	2200	64/32	1.9/36	13.83	--	--	--	--	--
p5-570	P5+/4	2200	64/32	3.8/72	27.58	--	--	--	--	--
p5-570	P5+/8	2200	64/32	7.6/144	52.21	--	--	--	--	--
p5-570	P5+/12	2200	64/32	11.4/216	74.95	--	--	--	--	--
p5-570	P5+/16	2200	64/32	15.2/288	95.96	--	--	--	--	--
#p5-575	P5/16	1500	64/32	15.2/288	--	238	230	385	359	--
#p5-575	P5/8	1900	64/32	15.2/288	--	167	159	282	266	--
p5-575	P5+/16	1900	64/32	15.2/288	--	314	310	571	541	--
p5-575	P5+/8	2200	64/32	15.2/288	--	200	196	382	355	--
#p5-590	P5/8	1650	64/32	7.6/144	41.68	--	--	--	--	--
#p5-590	P5/16	1650	64/32	15.2/288	80.86	--	--	--	--	--
#p5-590	P5/24	1650	64/32	22.8/432	116.29	--	--	--	--	--
#p5-590	P5/32	1650	64/32	30.4/576	151.72	529	503	870	824	--
p5-590	P5+/8	2100	64/32	7.6/144	55.74	--	--	--	--	--
p5-590	P5+/16	2100	64/32	15.2/288	108.13	--	--	--	--	--
p5-590	P5+/24	2100	64/32	22.8/432	155.51	--	--	--	--	--
p5-590	P5+/32	2100	64/32	30.4/576	202.88	--	--	--	--	--
#p5-595	P5/16	1650	64/32	15.2/288	80.86	--	--	--	--	--
#p5-595	P5/24	1650	64/32	22.8/432	116.29	--	--	--	--	--
#p5-595	P5/32	1650	64/32	30.4/576	151.72	--	--	--	--	--
#p5-595	P5/40	1650	64/32	38.0/720	182.07	--	--	--	--	--
#p5-595	P5/48	1650	64/32	45.6/864	212.41	--	--	--	--	--
#p5-595	P5/56	1650	64/32	53.2/1008	242.76	--	--	--	--	--
#p5-595	P5/64	1650	64/32	60.8/1152	273.10	--	--	--	--	--
#p5-595	P5/16	1900	64/32	15.2/288	90.67	--	--	--	--	--
#p5-595	P5/24	1900	64/32	22.8/432	130.39	--	--	--	--	--
#p5-595	P5/32	1900	64/32	30.4/576	170.11	--	--	--	--	--
#p5-595	P5/40	1900	64/32	38.0/720	204.14	--	--	--	--	--
#p5-595	P5/48	1900	64/32	45.6/864	238.16	--	--	--	--	--
#p5-595	P5/56	1900	64/32	53.2/1008	272.18	--	--	--	--	--
#p5-595	P5/64	1900	64/32	60.8/1152	306.21	1,147	1,063	1,752	1,684	--
p5-595	P5+/16	2100	64/32	15.2/288	108.13	--	--	--	--	--
p5-595	P5+/24	2100	64/32	22.8/432	155.51	--	--	--	--	--
p5-595	P5+/32	2100	64/32	30.4/576	202.88	--	--	--	--	--
p5-595	P5+/40	2100	64/32	38.0/720	243.46	--	--	--	--	--
p5-595	P5+/48	2100	64/32	45.6/864	284.04	--	--	--	--	--
p5-595	P5+/56	2100	64/32	53.2/1008	324.61	--	--	--	--	--
p5-595	P5+/64	2100	64/32	60.8/1152	365.19	--	--	--	--	--
p5-595	P5+/16	2300	64/32	15.2/288	116.53	--	--	--	--	--
p5-595	P5+/24	2300	64/32	22.8/432	167.58	--	--	--	--	--
p5-595	P5+/32	2300	64/32	30.4/576	218.64	--	--	--	--	--
p5-595	P5+/40	2300	64/32	38.0/720	262.37	--	--	--	--	--
p5-595	P5+/48	2300	64/32	45.6/864	306.10	--	--	--	--	--
p5-595	P5+/56	2300	64/32	53.2/1008	349.83	--	--	--	--	--
p5-595	P5+/64	2300	64/32	60.8/1152	393.55	1,513	1,488	2,406	2,215	--

Section 2b – Power Systems Multiuser Performance using AIX 5L V5.2

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	rPerf
#p5-505	P5/2	1500	64/32	1.9/36	7.02
#p5-505	P5/1	1650	64/32	1.9/0	2.70
#p5-505	P5/2	1650	64/32	1.9/36	7.58
p5-505	P5+/1	1900	64/32	1.9/0	3.15
p5-505	P5+/2	1900	64/32	1.9/36	8.84
p5-505	P5+/2	2100	64/32	1.9/36	9.59
p5-505Q	P5+/4	1650	64/32	1.9/72	15.57
#p5-510	P5/1	1500	64/32	1.9/0	2.50
#p5-510	P5/2	1500	64/32	1.9/36	7.02
#p5-510	P5/1	1650	64/32	1.9/36	4.03
#p5-510	P5/2	1650	64/32	1.9/36	7.58
#p5-510	P5+/1	1900	64/32	1.9/36	4.70
#p5-510	P5+/2	1900	64/32	1.9/36	8.83
p5-510	P5+/1	2100	64/32	1.9/0	5.10
p5-510	P5+/2	2100	64/32	1.9/36	9.59
#p5-510Q	P5+/4	1500	64/32	1.9/72	14.42
p5-510Q	P5+/4	1650	64/32	1.9/72	15.57
#p5-520	P5/1	1500	64/32	1.9/0	2.50
#p5-520	P5/2	1500	64/32	1.9/36	7.02
#p5-520	P5/2	1650	64/32	1.9/36	7.58
#p5-520	P5+/1	1650	64/32	1.9/0	2.78
#p5-520	P5+/2	1650	64/32	1.9/36	7.80
#p5-520	P5+/2	1900	64/32	1.9/36	8.58
p5-520	P5+/1	2100	64/32	1.9/36	5.10
p5-520	P5+/2	2100	64/32	1.9/36	9.59
#p5-520Q	P5+/4	1500	64/32	1.9/72	14.42
p5-520Q	P5+/4	1650	64/32	1.9/72	15.57
#p5-550	P5/1	1500	64/32	1.9/0	2.50
#p5-550	P5/2	1500	64/32	1.9/36	7.02
#p5-550	P5/4	1500	64/32	3.8/72	14.00
#p5-550	P5/2	1650	64/32	1.9/36	7.58
#p5-550	P5/4	1650	64/32	3.8/72	15.12
#p5-550	P5+/2	1650	64/32	1.9/36	7.80
#p5-550	P5+/4	1650	64/32	3.8/72	15.57
p5-550	P5+/2	1900	64/32	1.9/36	8.58
p5-550	P5+/4	1900	64/32	3.8/72	17.12
p5-550	P5+/2	2100	64/32	1.9/36	9.59
p5-550	P5+/4	2100	64/32	3.8/72	19.12
#p5-550Q	P5+/4	1500	64/32	3.8/72	14.00
#p5-550Q	P5+/8	1500	64/32	7.6/144	26.50
p5-550Q	P5+/4	1650	64/32	3.8/72	15.57
p5-550Q	P5+/8	1650	64/32	7.6/144	29.49
p5-560Q	P5+/4	1500	64/32	3.8/72	14.42
p5-560Q	P5+/8	1500	64/32	7.6/144	27.30
p5-560Q	P5+/16	1500	64/32	15.2/288	50.18
p5-560Q	P5+/4	1800	64/32	3.8/72	16.71
p5-560Q	P5+/8	1800	64/32	7.6/144	31.63
p5-560Q	P5+/16	1800	64/32	15.2/288	58.14
#p5-570	P5/2	1500	64/32	1.9/36	7.02
#p5-570	P5/4	1500	64/32	3.8/72	14.00
#p5-570	P5/8	1500	64/32	7.6/144	26.50
#p5-570	P5/2	1650	64/32	1.9/36	7.58
#p5-570	P5/4	1650	64/32	3.8/72	15.12
#p5-570	P5/8	1650	64/32	7.6/144	28.63

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	rPerf
#p5-570	P5/12	1650	64/32	11.4/216	41.10
#p5-570	P5/16	1650	64/32	15.2/288	52.61
#p5-570	P5/2	1900	64/32	1.9/36	8.58
#p5-570	P5/4	1900	64/32	3.8/72	17.12
#p5-570	P5/8	1900	64/32	7.6/144	32.41
#p5-570	P5/12	1900	64/32	11.4/216	46.53
#p5-570	P5/16	1900	64/32	15.2/288	59.57
p5-570	P5+/2	1900	64/32	1.9/36	9.43
p5-570	P5+/4	1900	64/32	3.8/72	18.83
p5-570	P5+/8	1900	64/32	7.6/144	35.66
p5-570	P5+/12	1900	64/32	11.4/216	51.19
p5-570	P5+/16	1900	64/32	15.2/288	65.53
p5-570	P5+/2	2200	64/32	1.9/36	10.63
p5-570	P5+/4	2200	64/32	3.8/72	21.21
p5-570	P5+/8	2200	64/32	7.6/144	40.16
p5-570	P5+/12	2200	64/32	11.4/216	57.65
p5-570	P5+/16	2200	64/32	15.2/288	73.81
#p5-590	P5/8	1650	64/32	7.6/144	32.06
#p5-590	P5/16	1650	64/32	15.2/288	62.20
#p5-590	P5/24	1650	64/32	22.8/432	89.46
#p5-590	P5/32	1650	64/32	30.4/576	116.71
p5-590	P5+/8	2100	64/32	7.6/144	42.87
p5-590	P5+/16	2100	64/32	15.2/288	83.18
p5-590	P5+/24	2100	64/32	22.8/432	119.62
p5-590	P5+/32	2100	64/32	30.4/576	156.06
#p5-595	P5/16	1650	64/32	15.2/288	62.20
#p5-595	P5/24	1650	64/32	22.8/432	89.46
#p5-595	P5/32	1650	64/32	30.4/576	116.71
#p5-595	P5/40	1650	64/32	38.0/720	140.05
#p5-595	P5/48	1650	64/32	45.6/864	163.39
#p5-595	P5/56	1650	64/32	53.2/1008	186.74
#p5-595	P5/64	1650	64/32	60.8/1152	210.08
#p5-595	P5/16	1900	64/32	15.2/288	69.74
#p5-595	P5/24	1900	64/32	22.8/432	100.30
#p5-595	P5/32	1900	64/32	30.4/576	130.86
#p5-595	P5/40	1900	64/32	38.0/720	157.03
#p5-595	P5/48	1900	64/32	45.6/864	183.20
#p5-595	P5/56	1900	64/32	53.2/1008	209.37
#p5-595	P5/64	1900	64/32	60.8/1152	235.54
p5-595	p5+/16	2100	64/32	15.2/288	83.18
p5-595	P5+/24	2100	64/32	22.8/432	119.62
p5-595	P5+/32	2100	64/32	30.4/576	156.06
p5-595	P5+/40	2100	64/32	38.0/720	187.28
p5-595	P5+/48	2100	64/32	45.6/864	218.49
p5-595	P5+/56	2100	64/32	53.2/1008	249.70
p5-595	P5+/64	2100	64/32	60.8/1152	280.92
p5-595	P5+/16	2300	64/32	15.2/288	89.64
p5-595	P5+/24	2300	64/32	22.8/432	128.91
p5-595	P5+/32	2300	64/32	30.4/576	168.19
p5-595	P5+/40	2300	64/32	38.0/720	201.82
p5-595	P5+/48	2300	64/32	45.6/864	235.46
p5-595	P5+/56	2300	64/32	53.2/1008	269.10
p5-595	P5+/64	2300	64/32	60.8/1152	302.73

Section 2c - AIX Capacity Upgrade on Demand Relative Performance Guidelines

Model	Processor / # Cores	MHz	rPerf
#p5-570	P5/4	1650	19.66
#p5-570	P5/6	1650	28.44
#p5-570	P5/8	1650	37.22
#p5-570	P5/10	1650	45.33
#p5-570	P5/12	1650	53.43
#p5-570	P5/14	1650	60.92
#p5-570	P5/16	1650	68.40
#p5-570	P5/4	1900	22.26
#p5-570	P5/6	1900	32.20
#p5-570	P5/8	1900	42.14
#p5-570	P5/10	1900	51.32
#p5-570	P5/12	1900	60.50
#p5-570	P5/14	1900	68.98
#p5-570	P5/16	1900	77.45
p5-570	P5+/4	1900	24.48
p5-570	P5+/6	1900	35.42
p5-570	P5+/8	1900	46.36
p5-570	P5+/10	1900	56.45
p5-570	P5+/12	1900	66.55
p5-570	P5+/14	1900	75.87
p5-570	P5+/16	1900	85.20
p5-570	P5+/4	2200	27.58
p5-570	P5+/6	2200	39.90
p5-570	P5+/8	2200	52.21
p5-570	P5+/10	2200	63.58
p5-570	P5+/12	2200	74.95
p5-570	P5+/14	2200	85.46
p5-570	P5+/16	2200	95.96
570	P6/4	3500	31.69
570	P6/6	3500	45.32
570	P6/8	3500	58.95
570	P6/10	3500	71.15
570	P6/12	3500	83.35
570	P6/14	3500	94.55
570	P6/16	3500	105.75
570	P6/4	4200	36.76
570	P6/6	4200	52.57
570	P6/8	4200	68.38
570	P6/10	4200	82.53
570	P6/12	4200	96.68
570	P6/14	4200	109.67
570	P6/16	4200	122.67
570	P6/4	4700	40.26
570	P6/6	4700	57.58
570	P6/8	4700	74.89
570	P6/10	4700	90.39
570	P6/12	4700	105.89
570	P6/14	4700	120.12
570	P6/16	4700	134.35
#p5-590	P5/8	1650	41.68
#p5-590	P5/10	1650	51.48

Model	Processor / # Cores	MHz	rPerf
#p5-590	P5/12	1650	61.27
#p5-590	P5/14	1650	71.07
#p5-590	P5/16	1650	80.86
#p5-590	P5/18	1650	89.72
#p5-590	P5/20	1650	98.58
#p5-590	P5/22	1650	107.44
#p5-590	P5/24	1650	116.29
#p5-590	P5/26	1650	125.15
#p5-590	P5/28	1650	134.01
#p5-590	P5/30	1650	142.87
#p5-590	P5/32	1650	151.72
p5-590	P5+/8	2100	55.74
p5-590	P5+/10	2100	68.84
p5-590	P5+/12	2100	81.93
p5-590	P5+/14	2100	95.03
p5-590	P5+/16	2100	108.13
p5-590	P5+/18	2100	119.98
p5-590	P5+/20	2100	131.82
p5-590	P5+/22	2100	143.67
p5-590	P5+/24	2100	155.51
p5-590	P5+/26	2100	167.35
p5-590	P5+/28	2100	179.20
p5-590	P5+/30	2100	191.04
p5-590	P5+/32	2100	202.88
#p5-595	P5/16	1650	80.86
#p5-595	P5/18	1650	89.72
#p5-595	P5/20	1650	98.58
#p5-595	P5/22	1650	107.44
#p5-595	P5/24	1650	116.29
#p5-595	P5/26	1650	125.15
#p5-595	P5/28	1650	134.01
#p5-595	P5/30	1650	142.87
#p5-595	P5/32	1650	151.72
#p5-595	P5/34	1650	159.31
#p5-595	P5/36	1650	166.90
#p5-595	P5/38	1650	174.48
#p5-595	P5/40	1650	182.07
#p5-595	P5/42	1650	189.65
#p5-595	P5/44	1650	197.24
#p5-595	P5/46	1650	204.83
#p5-595	P5/48	1650	212.41
#p5-595	P5/50	1650	220.00
#p5-595	P5/52	1650	227.58
#p5-595	P5/54	1650	235.17
#p5-595	P5/56	1650	242.76
#p5-595	P5/58	1650	250.34
#p5-595	P5/60	1650	257.93
#p5-595	P5/62	1650	265.52
#p5-595	P5/64	1650	273.10
#p5-595	P5/16	1900	90.67
#p5-595	P5/18	1900	100.60
#p5-595	P5/20	1900	110.53
#p5-595	P5/22	1900	120.46
#p5-595	P5/24	1900	130.39
#p5-595	P5/26	1900	140.32

Model	Processor / # Cores	MHz	rPerf
#p5-595	P5/28	1900	150.25
#p5-595	P5/30	1900	160.18
#p5-595	P5/32	1900	170.11
#p5-595	P5/34	1900	178.62
#p5-595	P5/36	1900	187.13
#p5-595	P5/38	1900	195.63
#p5-595	P5/40	1900	204.14
#p5-595	P5/42	1900	212.64
#p5-595	P5/44	1900	221.15
#p5-595	P5/46	1900	229.65
#p5-595	P5/48	1900	238.16
#p5-595	P5/50	1900	246.67
#p5-595	P5/52	1900	255.17
#p5-595	P5/54	1900	263.68
#p5-595	P5/56	1900	272.18
#p5-595	P5/58	1900	280.69
#p5-595	P5/60	1900	289.19
#p5-595	P5/62	1900	297.70
#p5-595	P5/64	1900	306.21
p5-595	P5+/16	2100	108.13
p5-595	P5+/18	2100	119.98
p5-595	P5+/20	2100	131.82
p5-595	P5+/22	2100	143.67
p5-595	P5+/24	2100	155.51
p5-595	P5+/26	2100	167.35
p5-595	P5+/28	2100	179.20
p5-595	P5+/30	2100	191.04
p5-595	P5+/32	2100	202.88
p5-595	P5+/34	2100	213.03
p5-595	P5+/36	2100	223.17
p5-595	P5+/38	2100	233.32
p5-595	P5+/40	2100	243.46
p5-595	P5+/42	2100	253.61
p5-595	P5+/44	2100	263.75
p5-595	P5+/46	2100	273.90
p5-595	P5+/48	2100	284.04
p5-595	P5+/50	2100	294.18
p5-595	P5+/52	2100	304.33
p5-595	P5+/54	2100	314.47
p5-595	P5+/56	2100	324.61
p5-595	P5+/58	2100	334.76
p5-595	P5+/60	2100	344.90
p5-595	P5+/62	2100	355.05
p5-595	P5+/64	2100	365.19
p5-595	P5+/16	2300	116.53
p5-595	P5+/18	2300	129.29
p5-595	P5+/20	2300	142.06
p5-595	P5+/22	2300	154.82
p5-595	P5+/24	2300	167.58
p5-595	P5+/26	2300	180.35
p5-595	P5+/28	2300	193.11
p5-595	P5+/30	2300	205.88
p5-595	P5+/32	2300	218.64
p5-595	P5+/34	2300	229.57
p5-595	P5+/36	2300	240.51
p5-595	P5+/38	2300	251.44

Model	Processor / # Cores	MHz	rPerf
p5-595	P5+/40	2300	262.37
p5-595	P5+/42	2300	273.30
p5-595	P5+/44	2300	284.24
p5-595	P5+/46	2300	295.17
p5-595	P5+/48	2300	306.10
p5-595	P5+/50	2300	317.03
p5-595	P5+/52	2300	327.97
p5-595	P5+/54	2300	338.90
p5-595	P5+/56	2300	349.83
p5-595	P5+/58	2300	360.76
p5-595	P5+/60	2300	371.69
p5-595	P5+/62	2300	382.62
p5-595	P5+/64	2300	393.55
595	P6/8	4200	75.58
595	P6/10	4200	92.41
595	P6/12	4200	109.24
595	P6/14	4200	126.07
595	P6/16	4200	142.90
595	P6/18	4200	158.35
595	P6/20	4200	173.80
595	P6/22	4200	189.25
595	P6/24	4200	204.70
595	P6/26	4200	220.15
595	P6/28	4200	235.60
595	P6/30	4200	251.06
595	P6/32	4200	266.51
595	P6/34	4200	279.89
595	P6/36	4200	293.28
595	P6/38	4200	306.67
595	P6/40	4200	320.05
595	P6/42	4200	333.44
595	P6/44	4200	346.83
595	P6/46	4200	360.21
595	P6/48	4200	373.60
595	P6/50	4200	386.89
595	P6/52	4200	400.17
595	P6/54	4200	413.46
595	P6/56	4200	426.74
595	P6/58	4200	440.03
595	P6/60	4200	453.32
595	P6/62	4200	466.60
595	P6/64	4200	479.89
595	P6/8	5000	87.10
595	P6/10	5000	106.49
595	P6/12	5000	125.88
595	P6/14	5000	145.28
595	P6/16	5000	164.67
595	P6/18	5000	182.48
595	P6/20	5000	200.28
595	P6/22	5000	218.09
595	P6/24	5000	235.90
595	P6/26	5000	253.70
595	P6/28	5000	271.51
595	P6/30	5000	289.31
595	P6/32	5000	307.12
595	P6/34	5000	322.54
595	P6/36	5000	337.97

Model	Processor / # Cores	MHz	rPerf
595	P6/38	5000	353.40
595	P6/40	5000	368.82
595	P6/42	5000	384.25
595	P6/44	5000	399.68
595	P6/46	5000	415.10
595	P6/48	5000	430.53
595	P6/50	5000	445.84
595	P6/52	5000	461.15
595	P6/54	5000	476.46
595	P6/56	5000	491.77
595	P6/58	5000	507.08
595	P6/60	5000	522.39
595	P6/62	5000	537.70
595	P6/64	5000	553.01

Section 2d - CPW Published Results

Model	Processor / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	CPW
JS12	P6/2	3800	64/64	16/-	7100
JS22	P6/4	4000	64/64	16/-	13800
520	P6/1	4200	64/64	8/-	4300
520	P6/2	4200	64/64	8/-	8300
550	P6/4	4200	64/64	16/64	18000
570	P6/2	3500	64/64	8/32	8150
570	P6/4	3500	64/64	16/64	16100
570	P6/8	3500	64/64	32/128	30100
570	P6/16	3500	64/64	64/256	57600
570	P6/2	4200	64/64	8/32	9650
570	P6/4	4200	64/64	16/64	19200
570	P6/8	4200	64/64	32/128	35500
570	P6/16	4200	64/64	64/256	68600
570	P6/2	4700	64/64	8/32	10800
570	P6/4	4700	64/64	16/64	21200
570	P6/8	4700	64/64	32/128	40100
570	P6/16	4700	64/64	64/256	76900

CPW values for non-POWER6 System i™ models may be obtained from <http://www.ibm.com/systems/i/solutions/perfmgmt/resource.html> .

Section 3 - TPC-C Version 5 Published Results

Model	Processor / # Cores	# Nodes	MHz	L2/L3 Cache (MB)	tpmC	\$/tmp C	Database	AIX	Avail. Date
550	P6/8	1	4200	32/128	629,159.00	2.49	DB2 9.5	5.3.0	04/20/08
#p5-570	P5/4	1	1900	3.8/72	194,391.43	5.62	Oracle DB 10g	5.3.0	09/30/04
#p5-570	P5/4	1	1900	3.8/72	203,439.87	3.93	Oracle DB 10g	5.3.0	10/17/05
#p5-570	P5/8	1	1900	7.6/144	371,044.22	5.26	Oracle DB 10g	5.3.0	09/30/04
#p5-570	P5/8	1	1900	7.6/144	429,899.7	4.99	DB2@ UDB V8.1	5.3.0	09/30/04
#p5-570	P5/16	1	1900	15.2/288	809,144.09	4.95	DB2 UDB V8.1	5.3.0	09/30/04
p5-570	P5+/16	1	2200	15.2/288	1,025,169.69	4.42	DB2 UDB V8.2	5.3.0	05/31/06
570	P6/4	1	4700	16/64	404,462.54	3.50	Oracle DB 10g	5.3.0	11/26/07
570	P6/16	1	4700	64/256	1,616,162.84	3.54	DB2 9.1	5.3.0	11/21/07
#p5-595	P5/32	1	1900	30.4/576	1,601,784.98	5.05	Oracle DB 10g	5.3.0	04/20/05
#p5-595	P5/64	1	1900	60.8/1152	3,210,540.63	5.07	DB2 UDB V8.2	5.3.0	05/14/05
p5-595	P5+/64	1	2300	60.8/1152	4,033,378.00	2.97	DB2 9.1	5.3.0	12/20/06
595	P6/64	1	5000	256/1024	6,085,166.00	2.81	DB2 9.5	5.3.0	12/10/10

Section 4 - TPC-H Published Results

TPC-H 1000 GB (1 TB):

Proc.	# Nodes	MHz	QphH	QppH	QthH	\$/QphH	AIX	Database	Avail. Date
#p5-570 P5	4	1900	26,156	35,789.6	19,115.9	53	5.3.0	DB2 UDB V8.2	12/15/04

TPC-H 3000 GB (3 TB):

Model	Proc./# Cores	# Nodes	MHz	QphH	\$/QphH	AIX	Database	Avail. Date
#p5-595	P5/64	1	1900	100,512	53.00	5.3.0	Oracle DB 10g	03/01/06

TPC-H 10000 GB (10 TB):

Model	Proc./# Cores	# Nodes	MHz	QphH	\$/QphH	AIX	Database	Avail. Date
p570	P6/4	32	4700	343,551.2	32.89	5.3.0	DB2 Warehouse 9.5	04/15/08
#p5-575	P5/8	8	1900	104,100.1	61	5.3.0	DB2 UDB V8.2	08/15/05
p5-575	P5+/8	16	2200	180,108	47.00	5.3.0	DB2 UDB V8.2	08/30/06

Section 5 - AIX SPECsfs97_R1 Benchmark Results

Model	Proc./# Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	SPEC sfs97_R1.v2 UDP	SPEC sfs97_R1.v2 TCP	SPEC sfs97_R1.v3 UDP	SPEC sfs97_R1.v3 TCP
#p5-510	P5/2	1650	64/32	1.9/36	--	--	--	42,033
#p5-550	P5/4	1650	64/32	3.8/72	--	--	--	75,839
#p5-550Q	P5+/8	1500	64/32	7.6/144	--	--	--	118,391
#p5-570	P5/8	1900	64/32	7.6/144	--	--	--	145,362
p5-570	P5+/8	2200	64/32	7.6/144	--	--	--	169,786

Section 5a - AIX NotesBench Published Results

Model	Processor / # Cores	MHz	L2/L3 Cache (MB)	Users	TPM	Response Time	\$/User	Domin oVers.	Work Load
#p5-570	P5/8	1500	1.9/36	17,400	14,740	0.270	10.19	6.5.3	R6iNotes

R7iNotes

Model	Proc.	MHz	Work Load	# Notes Bench Users	Notes Mark (TPM)	Resp. Time (ms.)	\$/User	\$/Notes Mark	# Cores	# Users/Core
#p5-550Q	P5+	1500	DWA7	24,000	20,108	932	5.97	7.13	8	3,000
p5-560Q	P5+	1800	DWA7	55,000	46,193	848	4.89	5.82	16	3,438

Section 6 - AIX Java Benchmarks (SPECjvm98, SPECjbb2000, SPECjbb2005) Published Results

Model	Proc / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	SPEC jvm98 (256MB)	SPEC jbb2000 ops/sec	SPECjbb2005 bops	SPECjbb2005 JVM inst.	bops/JVM
JS20	PPC970/2	2200	64/32	1.0/-	--	39,605	--	--	--
p5-505	P5+/2	2100	64/32	1.9/36	--	--	41,751	1	41,751
p5-505Q	P5+/4	1650	64/32	1.9/72	--	--	63,544	2	31,772
#p5-510	P5/2	1500	64/32	1.9/36	--	68,029	--	--	--
#p5-510	P5/2	1650	64/32	1.9/36	--	76,040	--	--	--
#p5-510	P5+/2	1900	64/32	1.9/36	--	--	36,039	1	36,039
#p5-510Q	P5+/4	1500	64/32	1.9/72	--	--	54,785	1	54,785
#p5-520	P5/2	1650	64/32	1.9/36	--	75,607	--	--	--
#p5-520	P5+/2	1900	64/32	1.9/36	--	99,844	32,820	1	32,820
#p5-550	P5+/4	1650	64/32	3.8/72	--	--	60,419	1	60,419
p5-550	P5+/4	1900	64/32	3.8/72	--	190,445	61,789	1	61,789
#p5-550Q	P5+/8	1500	64/32	7.6/144	--	294,315	91,806	1	91,806
p5-550Q	P5+/8	1650	64/32	7.6/144	--	--	127,851	8	15,981
550	P6/8	4200	64/64	32/128	--	--	333,779	4	83,445
#p5-560Q	P5+/16	1500	64/32	15.2/288	--	--	226,291	8	28,286
p5-560Q	P5+/16	1800	64/32	15.2/288	--	--	278,384	8	34,798
#p5-570	P5/2	1900	64/32	1.9/36	--	86,267	--	--	--
#p5-570	P5/4	1900	64/32	3.8/72	--	170,127	--	--	--
#p5-570	P5/8	1900	64/32	7.6/144	--	328,996	--	--	--
#p5-570	P5/16	1900	64/32	15.2/288	--	633,106	224,200	1	224,200
#p5-570	P5/16	1900	64/32	15.2/288	--	--	244,361	8	30,545
p5-570	P5+/16	2200	64/32	15.2/288	--	--	326,651	8	40,831
570	P6/2	4700	64/64	8/32	--	--	88,089	1	88,089
570	P6/4	4700	64/64	16/64	--	--	175,474	2	87,737
570	P6/8	4700	64/64	32/128	--	--	346,742	4	86,686
570	P6/16	4700	64/64	64/256	--	--	691,975	8	86,497
570	P6/4	4700	64/64	16/64	--	--	205,917	2	102,959
570	P6/8	4700	64/64	32/128	--	--	402,923	4	100,731
570	P6/16	4700	64/64	64/256	--	--	798,752	8	99,844
#p5-595	P5/64	1900	64/32	60.8/1152	--	2,200,162	--	--	--
#p5-595	P5/64	1900	64/32	60.8/1152	--	2,505,245	--	--	--
595	P6/64	5000	64/64	256/1024	--	--	3,435,485	32*	107,359

Section 6a - IBM i Java Benchmarks (SPECjbb2005) Published Results

Model	Proc / # Cores	MHz	L1 Cache (KB)	L2/L3 Cache (MB)	bops	SPECjbb2005 JVM inst.	bops/JVM
570	P6/8	4700	64/64	32/128	--	--	345,809

Section 6b - AIX SPECjAppServer2004 Benchmark Published

J2EE Server	GHz	J2EE AppServer	J2EE Nodes / Cores	DB Server	GHz	Database	DB Nodes / Cores	JOPS
JS22	4.0	WebSphere 6.1	26/4	P5-595	2.1	DB2 9.5	1/40	14,004.42
p5-505	2.1	WebSphere® 6.0	1/2	p5-505	1.65	DB2 UDB V8.2	1/2	349.11
p5-505	2.1	WebSphere 6.1	1/2	p5-505Q	1.65	DB2 UDB V8.2	1/4	404.88
p5-505Q	1.65	WebSphere 6.1	1/4	p5-550	2.1	DB2 UDB V8.2	1/4	618.38
570	4.7	WebSphere 6.1	1/4	p5-550	2.1	DB2 9.1	1/4	1,197.51

Section 7 - SAP Standard Application Benchmarks Published Results

Sales and Distribution – SD 2-Tier - AIX

Model (GHz)	# Core	Users	Avg. Resp. Time	Dialog Steps Per Hour (K)	Fully Proc. Line Items Per Hour	SAPS (K)	OS	Database	CPU Util. %	SAP ECC Ver.	Cert. #
#p5-520 P5 1.65	2	572	1.96	172	57,330	2.87	AIX 5.3	DB2 UDB V8.1	98%	4.70	2004061
p5-505 P5+ 2.1	2	680	1.98	204	68,000	3.4	AIX 5.3	DB2 9.1	98%	5.0	2006047
p5-505Q P5+ 1.65	4	1,100	1.97	331	110,330	5.52	AIX 5.3	DB2 9.1	99%	5.0	2006046
#p5-570 P5 1.9	4	1,313	1.97	395	131,670	6.58	AIX 5.3	DB2 UDB V8.1	99%	4.70	2004042
#p5-570 P5 1.9	8	2,600	1.99	781	260,330	13.02	AIX 5.3	DB2 UDB V8.1	99%	4.70	2004041
#p5-570 P5 1.9	16	5,056	1.99	1,518	506,000	25.3	AIX 5.3	DB2 UDB V8.1	99%	4.70	2004040
p5-570 P5+ 2.2	16	5,520	1.97	1,660	553,330	27.67	AIX 5.3	DB2 UDB V8.2	99%	5.0	2006044
570 P6 4.7	4	2,035	1.99	611	203,670	10.18	AIX 5.3	Oracle DB 10g	99%	6.0	2007037
570 P6 4.7	8	4,010	1.96	1,207	402,330	20.12	AIX 5.3	Oracle DB 10g	99%	6.0	2007038
570 P6 4.7	16	8,000	1.98	2,404	801,330	40.07	AIX 5.3	DB2 9.5	99%	6.0	2007039
#p5-595 P5 1.9	64	20,000	1.92	6,042	2,014,000	100.7	AIX 5.3	DB2 UDB V8.1	97%	4.70	2004062
p5-595 P5+ 2.3	64	23,456	1.98	7,051	2,350,330	117.52	AIX 5.3	DB2 9.1	99%	5.0	2006045
595 P6 5.0	64	35,400	1.94	10,677	3,559,000	177.95	AIX 6.1	DB2 9.5	99%	6.0	20080xx

Sales and Distribution – SD 2-Tier Parallel

Model (GHz)	# Cores	Users S&D	Avg. Resp. Time	Dialog Steps Per Hour (K)	Fully Proc. Line Items Per Hour	SAPS	OS	Database	Avg. CPU Util. %	SAP ECC Ver.	Cert. #
p5-570 P5 1.9	2 x 4c	2,400	1.95	723	241	12050	AIX 5.3	Oracle 9i	99%	4.7	2005033
570 P6 4.7	5 x 16c	36,000	1.76	11,021	3,673.67	183680	AIX.5.3	Oracle 10g r2	99%	6.0	2007066
570 P6 4.7	2 x 16c	15,520	1.94	1,559.33	4,678	77,970	AIX 5.3	Oracle 10g r2	98%	6.0	2008010
570 P6 4.7	3 x 16c	22,416	1.94	2,252.33	6,757	112,620	AIX 5.3	Oracle 10g r2	99%	6.0	2008011
570 P6 4.7	4 x 16c	30,016	1.86	3,036	9,108	151,800	AIX 5.3	Oracle 10g r2	99%	6.0	2008012
570 P6 4.7	5 x 16c	37,040	1.86	3,749	11,247	187,450	AIX 5.3	Oracle 10g r2	99%	6.0	2008013

Sales and Distribution – SD 3-Tier

Model (GHz)	# Cores	Users	Avg. Resp. Time	Fully Proc. Line Items Per Hour (K)	Dialog Steps Per Hour (K)	SAPS	OS	Database	CPU Util. DB (%)	SAP ECC Ver.	Cert. #
JS12 (4.0)	2	14,000	1.95	1,406.33	4,219	70,320	AIX 6.1	DB2 9.5	97	6.0	2008031
550 P6 (4.2)	4	32,000	1.89	3,230.33	9,691	161,520	AIX.5.3	DB2 9.5	99	6.0	2008001
#p5-570 P5	4	21,712	1.96	2,178.67	6,536	108,930	AIX 5.3	DB2 UDB V8.2	97	4.70	2004076
#p5-595 P5	32	168,300	1.95	16,896.67	50,690	844,330	AIX 5.3	DB2 UDB V8.2.2	99	4.70	2005021

BI Data Mart

Model	# Core	Query Steps/ Hour	CPU Util. (%)	OS	Database	Platform Release	Cert. #
#i5-520 1.9 GHz	2	26,224	97%	i5/OS V5R4	DB2 for i5/OS V5R4	NW 7.0 (2004s)	2007061
520 p6 4.2 GHz	2	41,297	96%	i 6.1	DB2 for IBM i 6.1	NW 7.0 (2004s)	2008xxx
#i5-570 2.2 GHz	4	51,875	98%	i5/OS V5R4	DB2 for i5/OS V5R4	NW 2004s	2007003
#i5-570 2.2 GHz	8	114,687	95%	i5/OS V5R4	DB2 for i5/OS V5R4	NW 2004s	2007027
570 p6 4.7 GHz	4	92,716	98%	i5/OS V5R4M5	DB2 for i5/OS V5R4M5	NW 7.0 (2004s)	2007047

Section 8 - AIX PeopleSoft Benchmarks Published Results

HRMS Self-service Online

PS Version	Model	# Cores - MHz	Concurrent Users	Search	Save	Database
8.9	p5-570	12 - 1900	4,000	1.74 sec.	1.25 sec.	Oracle 10.1.0.3

Global Payroll France – Version 1

PS Version	Model	# Cores - MHz	Maximum Payees	Payroll Non Retro	Payroll Retro	Database
8.9	p570	8 - 4700	200,222	44.95	73.56	Oracle 9i

Global Payroll France – Version 2

PS Version	Model	# Cores - MHz	L2/L3 Cache (MB)	Memory (GB)	Disk (GB)	Large Rate	Database
8.9	p570	8 - 4700	32/128	84	550	200,222	Oracle 9.2.0.6

North American Payroll - Checks per Hour

PS Version	Model	# Cores - MHz	L2/L3 Cache (MB)	Memory (GB)	Disk (GB)	Large Rate	Database
8.8	p5-570	8 - 1900	0.95/18	64	3,931	393,000	DB2 V8.1

Section 9 - AIX Oracle e-Business Suite (eBS) Benchmarks Published Results

11i – 11.5.9

Model	GHz	# Cores	Users	Average Response Time (sec)	Release
#p5-570 P5	1.9	8	15,004	0.553	11.5.9

11i – 11.5.10

Model	GHz	# Cores	Kit	Online : Users /	User load	Online :	Batch :	Batch :
				Batch : Order Lines / Batch: Payroll Employees	% of maximum	Average Response Time (sec)		
p5-570 P5+	2.2	8	Medium	2,000 / 50,000 / 10,000	100% (full)	0.983	56,391	51,948
p5-570 P5+	2.2	8	Medium	1,800 / 50,000 / 10,000	90%	0.857	59,678	56,818
p5-570 P5+	2.2	8	Medium	1,400 / 50,000 / 10,000	70%	0.712	61,894	65,076
p570 P6	4.7	8	Medium	3000 / 50,000 / 10,000	100% (full)	0.764	94,757	74,257
p570 P6	4.7	8	Medium	2,700 / 50,000 / 10,000	90%	0.702	97,784	84,270
p570 P6	4.7	8	Medium	2,100 / 50,000 / 10,000	70%	0.625	106,838	91,047

11i – 11.5.10 Real Application Clusters (RAC)

Model	GHz	# Nodes x # Cores	Kit	Online : Users /	User load	Online	Batch :	Batch :
				Batch : Order Lines / Batch: Payroll Employees	% of maximum	Average Response Time (sec)		
p5-505 P5+	2.1	2 x 2c	Small	1,000 / 10,000 / 5,000	100% (full)	0.780	11,080	13,043
p5-505 P5+	2.1	2 x 2c	Small	900 / 10,000 / 5,000	90%	0.758	12,280	17,493
p5-505 P5+	2.1	2 x 2c	Small	700 / 10,000 / 5,000	70%	0.656	17,207	26,087

Section 10 - AIX Siebel Benchmarks Published Results

Siebel 7.7 Industry Applications Performance and Scalability Benchmark

DB Server	# Cores / Memory	App./Gateway Servers	# Cores / Memory	Concurrent Users	Database
#p5-570 P5	4/32GB	5x p690	16/64GB	12,500	DB2 UDB V8.1

Siebel CRM Release 8.0 Industry Applications Benchmark

Gateway / Application Servers	App Server # Cores / Memory	Concurrent Users	%CPU	DB Server	DB Server # Cores / Memory	Database
1x p570 P6 4.7 GHz	8 / 64GB	7,000	84%	1x p570 P6 4.7 GHz	4 / 32GB	Oracle 10gR2

Section 11 - AIX Sybase Benchmarks Published Results

Sybase Risk Analysis Platform Benchmark

DB Server	# Cores / Memory	Load Test with 16-Stream Binary Data (GB/Hour/Core)	Query Test: Cumulative Query Processing Times @ 50 Users (lower is better)	Database
p5-570 P5+ 2.2 GHz	8 / 32GB	7.407	2,308,842 msec	Sybase IQ
p570 P6 4.7 GHz	4 / 32GB	6.692	3,376,891 msec	Sybase IQ
p570 P6 4.7 GHz	8 / 32GB	11.254	1,459,035 msec	Sybase IQ

Section 12 - AIX Manugistics Benchmarks Published Results

Manugistics NetWORKS Fulfillment Benchmark

Server	# Cores	SKUs/Hour	SKUs/Hour/Core	Release
#p5-590	32	38,475,727	1,202,366	7.2
p5-595 2.3 GHz	64	116,500,032	1,820,313	7.3

Section 13 - Linux Published Benchmark Results

SPEC CPU2006 Performance

Model	Proc / #Cores	GHz	L1	L2/L3	SPEC	SPEC	SPEC	SPEC	Linux Version
			Cache (KB)	Cache (MB)	int_2006	int_base_2006	fp_2006	fp_base_2006	
JS12	P6/2	3.8	64/64	16/-	16.1	13.6	17.9	14.2	RHEL5.1
570	P6/1	4.7	64/64	8/32	21.7	17.8	22.5	18.1	RHEL5.1
570	P6/1	4.7	64/64	8/32	21.3	17.5	22.4	17.8	SLES10 SP1

SPEC CPU2000 Performance

Model	Proc / #Cores	GHz	L1	L2/L3	SPEC	SPEC	SPEC	SPEC	Linux Version
			Cache (KB)	Cache (MB)	int_2000	int_base_2000	fp_2000	fp_base_2000	
#OP710	P5/1	1.65	64/32	1.9/36	1,144	1,129	1,919	1,828	RHEL AS4
#OP720	P5/1	1.65	64/32	1.9/36	1,138	1,121	1,966	1,865	SLES9
p5-505	P5+/1	2.1	64/32	1.9/36	1655	1594	3293	2773	SLES10
p5-510	P5+/1	2.1	64/32	1.9/36	1655	1594	3293	2773	SLES10
p5-520	P5+/1	2.1	64/32	1.9/36	1655	1595	3283	2772	SLES10
p5-520Q	P5+/1	1.65	64/32	1.9/72	1302	1255	2580	2152	SLES10
p5-550	P5+/1	2.1	64/32	1.9/36	1656	1596	3282	2778	SLES10
p5-550Q	P5+/1	2.1	64/32	1.9/72	1303	1256	2573	2157	SLES10
p5-575	P5+/1	2.2	64/32	1.9/36	1730	1666	3418	2896	SLES10
p5-575	P5+/1	1.9	64/32	1.9/36	1501	1445	2979	2543	SLES10

Multuser Performance SPEC CPU2006

Model	Processor/ # Cores	GHz	L1	L2/L3	SPEC	SPEC	SPEC	SPEC	Linux Version
			Cache (KB)	Cache (MB)	int_rate_2006	int_rate_base_2006	fp_rate_2006	fp_rate_base_2006	
JS12	P6/2	3.8	64/64	16/-	45.9	41.2	42.5	36.2	RHEL5.1
JS22	P6/4	4.0	64/64	16/-	84.7	77.2	75.0	65.7	SLES0 SP1
520	P6/4	4.2	64/64	16/-	89.2	81.2	79.7	69.0	SLES10 SP1
550	P6/8	4.2	64/64	32/128	213	182	176	151	RHEL5.1
570	P6/4	4.7	64/64	16/64	122	108	116	98.8	RHEL5.1
570	P6/4	4.7	64/64	16/64	118	105	115	97.5	SLES10 SP1
570	P6/8	4.7	64/64	32/128	243	210	216	185	RHEL5.1
570	P6/8	4.7	64/64	32/128	234	204	215	182	SLES10 SP1
570	P6/16	4.7	64/64	64/256	484	420	430	369	RHEL5.1
570	P6/16	4.7	64/64	64/256	466	407	428	364	SLES10 SP1
575	P6/32	4.7	64/64	128/512	928	809	813	681	RHEL 5.2
595	P6/64	5.0	64/64	256/1024	2100	1840	2100	1710	RHEL 5.2

Multuser Performance SPEC CPU2000

Model	Processor/ # Cores	GHz	L1	L2/L3	SPEC	SPEC	SPEC	SPEC	Linux Version
			Cache (KB)	Cache (MB)	int_rate_2000	int_rate_base_2000	fp_rate_2000	fp_rate_base_2000	
#OP710	P5/2	1.65	64/32	1.9/36	--	--	40.2	39.5	SLES9
#OP710	P5/2	1.65	64/32	1.9/36	29.8	29.5	40.1	39.0	RHEL AS4
#OP720	P5/4	1.65	64/32	3.8/72	59.8	58.8	80.8	78.8	SLES9
p5-505	P5+/2	2.1	64/32	1.9/36	43.5	42.4	72.4	66.5	SLES10

Model	Processor/ # Cores	GHz	L1 Cache (KB)	L2/L3 Cache (MB)	SPEC int_ rate 2000	SPEC	SPEC	SPEC	Linux Version
						int_ rate_ base 2000	fp_ rate_ base 2000	fp_ rate_ base 2000	
p5-510	P5+/2	2.1	64/32	1.9/36	43.5	42.4	72.4	66.5	SLES10
p5-520	P5+/2	2.1	64/32	1.9/36	43.6	42.6	71.7	66.0	SLES10
p5-520Q	P5+/4	1.65	64/32	3.8/72	68.2	66.6	99.0	92.9	SLES10
p5-550	P5+/4	2.1	64/32	1.9/72	86.7	85.0	143	131	SLES10
p5-550Q	P5+/8	1.65	64/32	7.6/144	136	133	196	183	SLES10
#p5-575	P5/8	1.9	64/32	15.2/288	--	--	238	229	RHEL AS4
p5-575	P5+/8	2.2	64/32	1.9/288	199	193	370	310	SLES10
p5-575	P5+/16	1.9	64/32	1.9/288	311	305	541	478	SLES10
#p5-595	P5/32	1.9	64/32	30.4/576	--	--	781	754	SLES9 SP1

Java Performance (SPECjbb2000, SPECjbb2005)

Model	Processor / # Cores Memory	GHz	L1 Cache (KB)	L2/L3 Cache (MB)	SPEC jbb2000 ops/sec	SPEC jbb2005 ops/sec			Linux Version
						bops	JVM	bops / JVM	
							inst.		
#OP720	P5/4	1.65	64/32	3.8/72	136,167	-	-	-	SLES9
#OP720	P5/4	1.65	64/32	3.8/72	136,261	-	-	-	RHEL AS4
550	P6/8	4.2	64/64	32/128	-	328,343	4	82,086	RHEL5.1
#p5-570	P5/2 DDR2	1.9	64/32	1.9/36	82,615	-	-	-	SLES9
#p5-570	P5/4 DDR2	1.9	64/32	3.8/72	160,995	-	-	-	SLES9
#p5-570	P5/8 DDR1	1.9	64/32	7.6/144	299,197	-	-	-	SLES9
#p5-570	P5/16 DDR1	1.9	64/32	15.2/288	542,145	-	-	-	SLES9
570	P6/4	4.7	64/64	16/64	-	169,304	2	84,652	RHEL5.1
570	P6/8	4.7	64/64	32/128	-	335,424	4	83,856	RHEL5.1
570	P6/16	4.7	64/64	64/256	-	664,167	8	83,021	RHEL5.1
#p5-595	P5/32	1.9	64/32	30.4/576	1,076,309	-	-	-	SLES9

Web Serving SPECweb99 and SPECweb99_SSL Performance

Model	Proc./ # Cores	GHz	L1 Cache (KB)	L2/L3 Cache (MB)	Encryption card	SPEC web99	SPEC web99 ssl	Linux Version
#p5-570	P5/4	1.9	64/32	3.8/72	Yes, ICA	-	4,970	SLES9
#p5-570	P5/4	1.9	64/32	3.8/72	None	13,500	-	RHEL AS3
#p5-570	P5/8	1.9	64/32	7.6/144	None	25,000	-	RHEL AS4

Web Serving SEPCweb2005 Performance

Model	Proc./ # Cores	GHz	L1 Cache (KB)	L2/L3 Cache (MB)	Encryption card	Result	Banking	Ecommerce	Support	Linux Version
#p5-550	P5+/4	1.9	64/32	3.8/72	None	7,881	12,240	11,820	7,500	SLES9 SP2

SPECsfs97_R1 Benchmark Results

Model	Proc./ # Cores	GHz	L1 Cache (KB)	L2/L3 Cache (MB)	SPEC sfs97_R1.v3 UDP	SPEC sfs97_R1.v3 TCP	Linux Version
#p5-570	P5/2	1.9	64/32	1.9/36	--	45,586	SLES9
#p5-570	P5/4	1.9	64/32	3.8/72	--	81,889	SLES9 SP1

NetBench® Published Results

Model	Processor / # Cores	GHz	L1 Cache (KB)	L2/L3 Cache (MB)	Mbps
#p5-520	P5/1	1.65	64/32	1.9/36	787
#p5-520	P5/2	1.65	64/32	3.8/72	1,457
#p5-550	P5+/2	1.9	64/32	1.9/36	2,054
#p5-550	P5+/4	1.9	64/32	3.8/72	3,055

SAP Standard Application Benchmark Published Results
Sales and Distribution – SD 2-Tier

Model	# Core	Users	Average Resp. Time	Dialog Steps Per Hour	SAPS	Fully Proc. Line Items Per Hour	OS	Database	CPU Util. %	Kit Ver.	Cert. #
#p5-550 1.9 GHz P5	4	1000	1.97	301,000	5,020	100,330	SLES9	DB2 UDB V8.2.2	99	5.0	2005040
#p5-570 1.9 GHz P5	8	2000	1.95	603,000	10,050	201,000	SLES9	DB2 UDB V8.2.2	99	4.70	2004057
570 4.2 GHz P6	8	3104	1.91	938,000	15,630	312,670	RHEL5.1	DB2 9.5	97	6.0	2008002

STREAM Benchmarks

Model	Processor / # Cores	GHz	L1 Cache (KB)	L2/L3 Cache (MB)	Standard STREAM Triad MB/sec	Tuned STREAM Triad MB/sec	Linux Version
JS22	P6/4	4.0	64/64	16/-	15,701	--	SLES10 SP1
570	P6/4	4.7	64/64	16/64	29,404	--	RHEL5.1
575	P6/32	4.7	64/64	128/512	158,639	--	RHEL 5.2

TPC-C Version 5.4 Published Results

Model	Processor / # Cores	# Nodes	GHz	L2/L3 Cache (MB)	tpmC	\$/tmpC	Database	Linux Version	Avail. Date
#p5-570	P5/4	1	1.9	3.8/72	197,669.81	3.93	DB2 UDB V8.2	RHEL AS4	02/07/06
p5-570	P5+/4	1	2.2	3.8/72	236,271	2.56	Oracle 10g R2 EE	RHEL5	04/04/08
#p5-520	P5+/2	1	1.65	1.9/36	81,439.30	2.99	Sybase ASE	SLES9	12/22/06
550	P6/4	1	4.2	16/64	276,383	2.22	Sybase ASE	RHEL 5.1	12/16/08

SPECjAppServer2004 Performance

J2EE Model/GHz	J2EE OS	J2EE AppServer	# J2EE Nodes / Cores	DB Model/GHz	Database OS	Database	# DB Nodes	JOPS
#p5-550 1.9 GHz	SLES 9	WebSphere 6.0	8 nodes 32 cores	p5-570 / 1.9	SLES9	DB2 UDB V8.2.3	1 node 8 cores	2921.48

Section 14 - Historical Multiuser Performance

Type Model	Product Name	Announce Date	Marketing Withdrawal	Processor	MHz	# Cores	rPerf	
9110-510	eServer p5 510	2005/02/18	2006/11/13	POWER5	1500	1	3.25	
9110-510				POWER5	1500	2	9.13	
9110-510				2006/05/31	POWER5	1650	1	5.24
9110-510					POWER5	1650	2	9.86
9110-51A	System p5 510	2006/02/14	2007/02/12	POWER5+	1900	1	6.11	
9110-51A				POWER5+	1900	2	11.49	
9110-51A	System p5 510Q			POWER5+	1500	4	18.75	
9111-285	Intelli Station 285	2005/10/04	2007/02/12	POWER5+	1900	1		
9111-285				POWER5+	1900	2		
9111-520	eServer p5 520	2004/07/13	2006/05/31	POWER5	1500	1	3.25	
9111-520				POWER5	1500	2	9.13	
9111-520				POWER5	1650	2	9.86	
9112-265	Intelli Station 265	2002/02/05	2003/12/12	POWER3-II	450	2	N/A	
9113-550	eServer p5 550	2004/07/13	2006/05/31	POWER5	1500	1	3.25	
9113-550				POWER5	1500	2	9.13	
9113-550				POWER5	1500	4	18.20	
9113-550				POWER5	1650	2	9.86	
9113-550				POWER5	1650	4	19.66	
9114-275	Intelli Station 275	2003/06/24	2006/05/31	POWER4+	1000	1	N/A	
9114-275				POWER4+	1450	1	N/A	
9114-275				POWER4+	1450	2	N/A	
9115-505	System p5 505	2005/10/04	2006/01/13	POWER5+	1500	2	9.13	
9115-505				POWER5+	1650	1	3.51	
9115-505				POWER5+	1650	2	9.86	
9116-561	System p5 560Q	2006/02/14	2008/02/25	POWER5+	1500	4	18.75	
9116-561				POWER5+	1500	8	35.50	
9116-561				POWER5+	1500	16	65.24	
9117-570	eServer p5 570	2004/07/13	2006/05/31	POWER5	1500	2	9.13	
9117-570				POWER5	1500	4	18.20	
9117-570				POWER5	1500	8	34.46	

Type Model	Product Name	Announce Date	Marketing Withdrawal	Processor	MHz	# Cores	rPerf
9117-570				POWER5	1650	2	9.86
9117-570				POWER5	1650	4	19.66
9117-570				POWER5	1650	8	37.22
9117-570				POWER5	1650	12	53.43
9117-570				POWER5	1650	16	68.40
9117-570				POWER5	1900	2	11.16
9117-570				POWER5	1900	4	22.26
9117-570				POWER5	1900	8	42.14
9117-570				POWER5	1900	12	60.50
9117-570				POWER5	1900	16	77.45
9118-575	System p5 575	2005/02/08	2006/11/17	POWER5	1500	16	N/A
9118-575		2005/02/08	2006/11/10	POWER5	1900	8	N/A
9119-590	eServer p5 590	2004/10/15	2007/02/12	POWER5	1650	8	41.68
9119-590				POWER5	1650	16	80.86
9119-590				POWER5	1650	24	116.29
9119-590				POWER5	1650	32	151.72
9119-595	eServer p5 595	2004/10/15	2007/02/12	POWER5	1650	16	80.86
9119-595				POWER5	1650	24	116.29
9119-595				POWER5	1650	32	151.72
9119-595				POWER5	1650	40	182.07
9119-595				POWER5	1650	48	212.41
9119-595				POWER5	1650	56	242.76
9119-595				POWER5	1650	64	273.10
9119-595				POWER5	1900	16	90.67
9119-595				POWER5	1900	24	130.39
9119-595				POWER5	1900	32	170.11
9119-595				POWER5	1900	40	204.14
9119-595				POWER5	1900	48	238.16
9119-595				POWER5	1900	56	272.18
9119-595				POWER5	1900	64	306.21
9123-710	eServer Open Power 710	2005/01/25	2006/05/31	POWER5	1650	1	N/A
				POWER5	1650	2	N/A
9124-720	eServer Open Power 720	2004/09/14	2006/05/31	POWER5	1500	1	N/A
9124-720				POWER5	1500	2	N/A
9124-720				POWER5	1500	4	N/A
9124-720				POWER5	1650	2	N/A
9124-720				POWER5	1650	4	N/A
9131-52A	System p5 520	2005/10/04	2007/02/12	POWER5+	1650	1	3.62
9131-52A				POWER5+	1650	2	10.15
9131-52A				POWER5+	1900	2	11.16
9131-52A	System			POWER5+	1500	4	18.75

Type Model	Product Name	Announce Date	Marketing Withdrawal	Processor	MHz	# Cores	rPerf
	p5 520Q						
9133-55A	System p5 550	2005/10/04	2007/02/12	POWER5+	1650	2	10.15
9133-55A				POWER5+	1650	4	20.25
9133-55A		2005/10/04	2007/04/27	POWER5+	1500	4	18.20
9133-55A				POWER5+	1500	8	34.46

Note: The Relative OLTP and/or rPerf projections are based on different levels of AIX / AIX 5L and databases. As a result, actual performance may vary. Estimates have been provided where no historical projections were available.

Notes on Performance Benchmarks and Values

The performance benchmarks and the values shown here were derived using particular, well configured, development-level computer systems. Unless otherwise indicated for a system, the values were derived using external cache if external cache is supported on the system. All performance benchmark values are provided "AS IS" and no warranties or guarantees are expressed or implied by IBM. Actual system performance may vary and is dependent upon many factors including system hardware configuration and software design and configuration. Buyers should consult other sources of information to evaluate the performance of systems they are considering buying and should consider conducting application oriented testing. For additional information about the performance benchmarks, values and systems tested, please contact your IBM local Branch Office or IBM Authorized Reseller or access the following on the Web:

SPEC - <http://www.spec.org>
TPC - <http://www.tpc.org>
ECperf - <http://ecperf.theserverside.com/ecperf/>

All performance measurements for the IBM System p, System p5, eServer p5, eServer pSeries and RS/6000 servers were made with systems running AIX or AIX 5L operating systems unless otherwise indicated to have used Linux. For new and upgraded systems, AIX Version 4.3 or AIX 5L were used. All other systems used previous versions of AIX.

The SPEC CPU2006 and SPEC CPU2000 benchmarks were compiled using IBM's high performance C, C++, and FORTRAN compilers for AIX 5L and Linux. For new and upgraded systems, the latest versions of these compilers were used: XL C Enterprise Edition V9.0 for AIX, XL C/C++ Enterprise Edition V9.0 for AIX, XL FORTRAN Enterprise Edition V11.1 for AIX, XL C/C++ Advanced Edition V8.0 for Linux, and XL FORTRAN Advanced Edition V10.1 for Linux.

The following SPEC and LINPACK benchmarks reflect the performance of the microprocessor, memory architecture and compiler of the tested system:

SPECint2006 - New SPEC component-level benchmark that measures integer performance. Result is the geometric mean of twelve tests that comprise the CINT2006 benchmark suite.

SPECint_base2006 - The result of the same tests in CINT2006 with the same compiler options that must be used in all twelve tests.

SPECint_rate2006 - Geometric average of the twelve SPEC rates from the SPEC integer tests (CINT2006).

SPECint_rate_base2006 - The result of the same tests as CINT2006 with the same compiler options that must be used in all twelve tests.

SPECfp2006 - New SPEC component-level benchmark that measures floating-point performance. Result is the geometric mean of seventeen tests, all written in FORTRAN and C languages, that are included in the CFP2006 benchmark suite.

SPECfp_base2006 - The result of the same tests in CFP2006 with the same compiler options that must be used in all seventeen tests.

SPECfp_rate2000 - Geometric mean of the seventeen SPEC rates from SPEC floating-point tests (CFP2006).

SPECfp_rate_base2000 - The result of the same tests as CFP2000 with the same compiler options that must be used in all seventeen tests.

SPECint2000 - SPEC component-level benchmark that measures integer performance. Result is the geometric mean of twelve tests that comprise the CINT2000 benchmark suite. All of these are written in C language except for one which is in C++.

SPECint_base2000 - The result of the same tests in CINT2000 with a maximum of four compiler options that must be used in all twelve tests.

SPECint_rate2000 - Geometric average of the twelve SPEC rates from the SPEC integer tests (CINT2000).

SPECint_rate_base2000 - The result of the same tests as CINT2000 with a maximum of four compiler options that must be used in all twelve tests.

SPECfp2000 - SPEC component-level benchmark that measures floating-point performance. Result is the geometric mean of fourteen tests, all written in FORTRAN and C languages, that are included in the CFP2000 benchmark suite.

SPECfp_base2000 - The result of the same tests in CFP2000 with a maximum of four compiler options that must be used in all fourteen tests.

SPECfp_rate2000 - Geometric mean of the fourteen SPEC rates from SPEC floating-point tests (CFP2000).

SPECfp_rate_base2000 - The result of the same tests as CFP2000 with a maximum of four compiler options that must be used in all fourteen tests.

SPEC_OMP2001 - Geometric mean 11 compute intensive parallel workload tests, written in Fortran and C languages.

SPECweb99 - Number of conforming, simultaneous connections the Web server can support using a predefined workload. The SPECweb99 test harness emulates clients sending the HTTP requests in the workload over slow Internet connections to the Web server. The Web server software is Zeus from Zeus Technology Ltd.

SPECweb2005 - Emulates users sending browser requests over broadband Internet connections to a Web server. It provides three new workloads: a banking site (HTTPS), an e-commerce site (HTTP/HTTPS mix); and a support site (HTTP).

SPECweb99 SSL - Number of conforming, simultaneous SSL encryption/decryption connections the Web server can support using a predefined workload. The Web server software is Zeus from Zeus Technology Ltd.

SPECjvm99 - Contains eight different tests. Each test measures the time it takes to load the program, verify the class files, compile on the fly if a JIT compiler is used, and execute the test. A geometric mean is used to compute a composite score. Test scores are normalized against a reference machine. Higher scores indicate better performance.

SPECjbb2000 - Expressed in operations per second; evaluates the performance of servers running typical Java business applications; it represents an order processing application for a wholesale supplier. The benchmark can be used to evaluate performance of hardware and software aspects of Java Virtual Machine (JVM) servers.

SPECjbb2005 - Expressed in bops and bops/JVM; evaluates the performance of servers running typical Java business applications; it represents an order processing application for a wholesale supplier. The benchmark can be used to evaluate performance of hardware and software aspects of Java Virtual Machine (JVM) servers.

SPECsfs97_R1 - Measures speed and request-handling capabilities of NFS (network file server) computers.

SPECjAppServer2004 - Measures the performance of Java Enterprise Application Servers using a subset of J2EE APIs in a complete end-to-end Web application.

VolanoMark - A Java server benchmark characterized by long-lasting network connections and high thread counts.

ECperf - benchmark measures performance and scalability of Java (J2EE) server.

The following Transaction Processing Council (TPC) benchmarks reflect the performance of the microprocessor, memory subsystem, disk subsystem and some portions of the network:

tpmC - TPC Benchmark C throughput measured as the average number of transactions processed per minute during a valid TPC-C configuration run of at least twenty minutes.

\$/tpmC - TPC Benchmark C price-performance ratio reflects the estimated five year total cost of ownership for system hardware, software and maintenance and is determined by dividing such estimated total cost by the tpmC for the system.

QppH - The power metric of TPC-H and is based on a geometric mean of the 17 TPC-H queries, the insert test and the delete test. It measures the ability of the system to give a single user the best possible response time by harnessing all available resources. QppH is scaled based on database size from 30GB to 1TB.

QthH - The throughput metric of TPC-H and is a classical throughput measure characterizing the ability of the system to support a multiuser workload in a balanced way. A number of query users is chosen, each of which must execute the full set of 17 queries in a different order. In the background, there is an update stream that runs a series of insert/delete operations. QthH is scaled based on the database size from 30GB to 1TB.

QphH is the geometric mean of the power tests (QppH) and the throughput tests (QthH).

\$/QphH - The price/performance metric for the TPC-H benchmark where QphH is the geometric mean of QppH and QthH. The price is the five year cost of ownership for the tested configuration and includes maintenance and software support.

Notes on Performance Estimates

rPerf (Relative Performance) - An estimate of commercial processing performance relative to other IBM UNIX systems. It is derived from an IBM analytical model which uses characteristics from IBM internal workloads, TPC and SPEC benchmarks. The rPerf model is not intended to represent any specific public benchmark results and should not be reasonably used in that way. The model simulates some of the system operations such as CPU, cache and memory. However, the model does not simulate disk or network I/O operations.

rPerf estimates are calculated based on systems with the latest levels of AIX 5L and other pertinent software at the time of system announcement. Actual performance will vary based on application and configuration details. The pSeries 640 is the baseline reference system and has a value of 1.0. Although rPerf may be used to compare estimated IBM UNIX commercial processing performance, actual system performance may vary and is dependent upon many factors including system hardware configuration and software design and configuration. Note that the rPerf methodology used for the POWER6 systems is identical to that used for the POWER5 systems. Variations in incremental system performance may be observed in commercial workloads due to changes in the underlying system architecture.

Commercial Processing Workload (CPW) is a relative measure of performance of processors running the IBM i operating system. Performance in client environments may vary. The value is based on maximum configurations. More performance information is available in the Performance Capabilities Reference at: <http://www.ibm.com/systems/i/solutions/perfmgmt/resource.html> .

All performance estimates are provided "AS IS" and no warranties or guarantees are expressed or implied by IBM. Buyers should consult other sources of information, including system benchmarks, and application sizing guides to evaluate the performance of a system they are considering buying. For additional information about rPerf and CPW, contact your local IBM office or IBM authorized reseller.

IBM withdrew Relative OLTP (ROLTP). Starting June 2001, IBM will not publish/update ROLTP results. ROLTP results of systems that are withdrawn from the market are left in Section 14, Historical Multiuser Performance.

Application Benchmarks

SAP - Benchmark overview information: <http://www.sap.com/benchmark/>

PeopleSoft - To get information on PeopleSoft benchmarks, contact PeopleSoft directly or the PeopleSoft/IBM International Competency Center in San Mateo, CA.

Oracle Applications - Benchmark overview information: http://www.oracle.com/apps_benchmark/html/results.html

Baan - The Baan benchmark demonstrates the scalability of Baan ERP solutions. The test results provide the number of Baan Reference Users (BRUs) that can be supported on a specific system. BRU is a single on-line user or a batch unit workload. These metrics are consistent with those used internally by both IBM and Baan to size systems. To get information on Baan benchmarks, go to <http://www.ssaglobal.com>.

NetBench - The Ziff Davis Media benchmark that measures the throughput and response time of a file server using the CIFS protocol to serve 32-bit Windows clients. Reports can be found at <http://www.veritest.com/clients/reports/> and <http://www.ibm.com/systems/p/benchmarks/>.

NotesBench - The driver program to test various aspects of Lotus® Notes®. It is designed to execute the commands in customized workload scripts, simulating Notes client actions. Source: <http://www.notesbench.org/>.

Total Users - Number of active users supported in the workload, each producing approximately one transaction/minute.

TPM - Transactions per minute (NotesMark)

Average Response Time - Average time for a transaction to be completed for an average user action.

\$/User - Total cost of the hardware and software including discounts quoted by a supplier.



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August 28 2008
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