



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 478

IBM System i 570 (4.7 GHz, 16 core)

SPECint_rate_base2006 = 410

CPU2006 license: 11

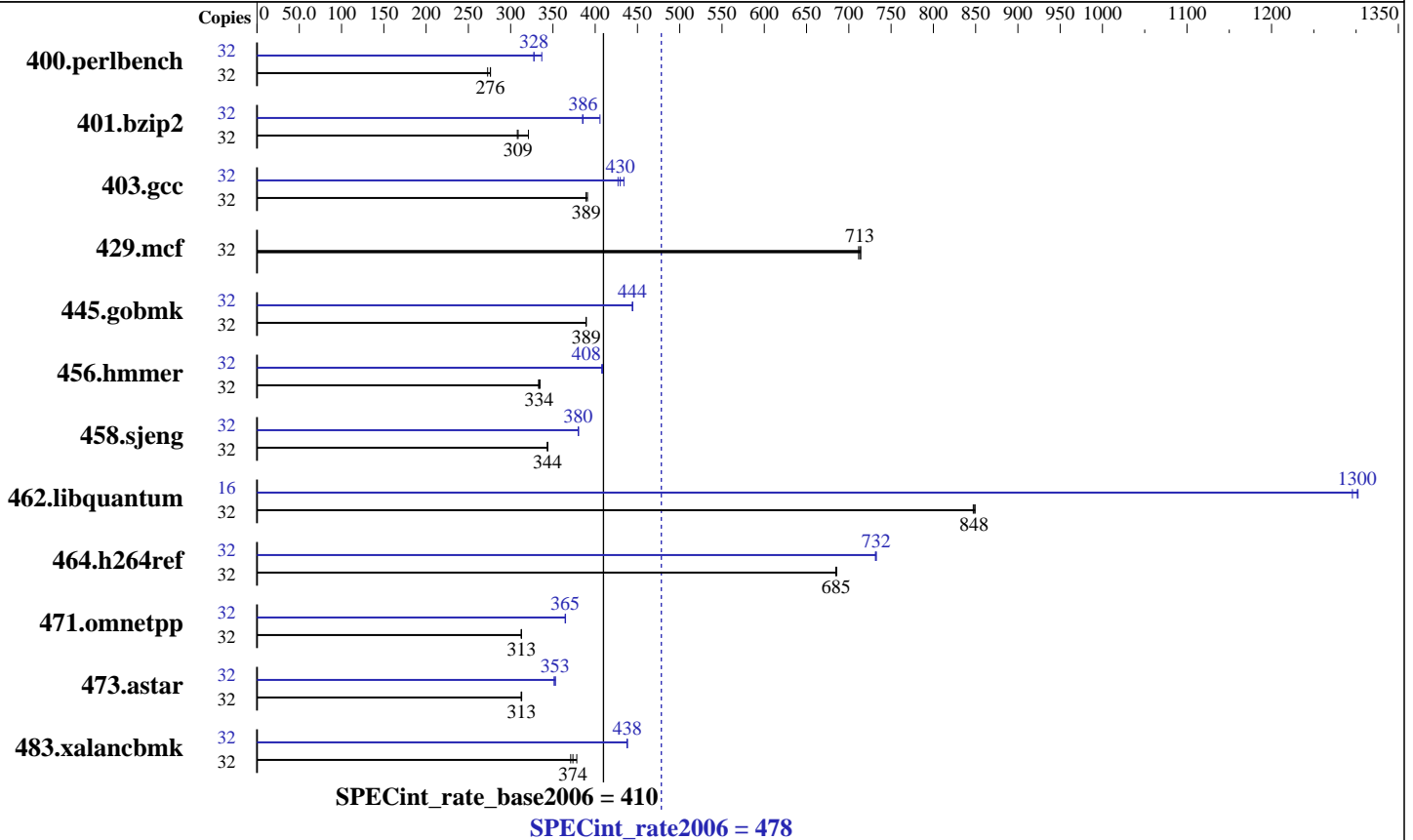
Test date: May-2007

Test sponsor: IBM Corporation

Hardware Availability: Sep-2007

Tested by: IBM Corporation

Software Availability: Jun-2007



Hardware

CPU Name: POWER6
 CPU Characteristics:
 CPU MHz: 4700
 FPU: Integrated
 CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 4,8,12,16 cores
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per core
 L3 Cache: 32 MB I+D off chip per chip
 Other Cache: None
 Memory: 128 GB (64x2 GB) DDR2 667 MHz
 Disk Subsystem: 2x73 GB 2x146 GB SAS 15K RPM
 Other Hardware: None

Software

Operating System: IBM AIX 5L V5.3
 Compiler: XL C/C++ Enterprise Edition Version 9.0 for AIX
 Auto Parallel: No
 File System: AIX/JFS2
 System State: Multi-user
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: --



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	1146	273	1132	276	<u>1132</u>	<u>276</u>	32	<u>954</u>	<u>328</u>	954	328	928	337
401.bzip2	32	1003	308	<u>1000</u>	<u>309</u>	962	321	32	<u>801</u>	<u>386</u>	802	385	761	406
403.gcc	32	659	391	<u>662</u>	<u>389</u>	662	389	32	603	427	<u>600</u>	<u>430</u>	594	434
429.mcf	32	410	712	<u>409</u>	<u>713</u>	409	714	32	410	712	<u>409</u>	<u>713</u>	409	714
445.gobmk	32	862	389	<u>862</u>	<u>389</u>	863	389	32	<u>756</u>	<u>444</u>	755	444	756	444
456.hammer	32	896	333	<u>895</u>	<u>334</u>	892	335	32	<u>731</u>	<u>408</u>	732	408	730	409
458.sjeng	32	1126	344	1127	343	<u>1127</u>	<u>344</u>	32	1018	380	1019	380	<u>1019</u>	<u>380</u>
462.libquantum	32	781	849	<u>782</u>	<u>848</u>	783	847	16	255	1300	<u>255</u>	<u>1300</u>	256	1300
464.h264ref	32	1033	686	<u>1034</u>	<u>685</u>	1034	685	32	968	731	967	732	<u>967</u>	<u>732</u>
471.omnetpp	32	640	312	639	313	<u>639</u>	<u>313</u>	32	549	365	548	365	<u>548</u>	<u>365</u>
473.astar	32	719	312	717	313	<u>718</u>	<u>313</u>	32	639	351	<u>637</u>	<u>353</u>	636	353
483.xalancbmk	32	595	371	<u>591</u>	<u>374</u>	584	378	32	505	438	<u>504</u>	<u>438</u>	504	438

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

AIX 5L V5.3 updated with the 5300-06 Technology Level.

See flags file of details on following settings.

all ulimits set to unlimited

Environment variables set before executing benchmarks:

MALLOCOPTIONS=pool

MEMORY_AFFINITY=MCM

XLFRTEOPTS=intrinths=1

System set to "Enhanced" mode when defining partition on HMC

6144 16M pages defined on systems with vmo command

fdpr binary optimization tool used for

401.bzip2 403.gcc 429.mcf 456.hammer 462.libquantum 473.astar

submit used to bind benchmark to a processor using "bindprocessor"

The "IBM System p 570" and "IBM System i 570" are electronically equivalent.

The results have been measured on the "IBM System p 570" model.

Base Compiler Invocation

C benchmarks:

/usr/vac/bin/xlc

C++ benchmarks:

/usr/vacpp/bin/xlC



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Base Portability Flags

400.perlbench: -DSPEC_CPU_AIX
462.libquantum: -DSPEC_CPU_AIX
464.h264ref: -DSPEC_CPU_AIX -qchars=signed
483.xalancbmk: -DSPEC_CPU_AIX

Base Optimization Flags

C benchmarks:
-O5 -qlargepage -D_ILS_MACROS -qalloca -blpdata
C++ benchmarks:
-O5 -qlargepage -D_ILS_MACROS -qrtti=all -blpdata

Base Other Flags

C benchmarks:
-qlanglvl=extc99 -bmaxdata:0x50000000 -qalias=noansi -qipa=noobject
-qipa=threads -qsuppress=1500-036
C++ benchmarks:
-bmaxdata:0x20000000 -qipa=noobject -qipa=threads -qsuppress=1500-036

Peak Compiler Invocation

C benchmarks:
/usr/vac/bin/xlc
C++ benchmarks:
/usr/vacpp/bin/xlC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_AIX
403.gcc: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_AIX
464.h264ref: -DSPEC_CPU_AIX -qchars=signed
483.xalancbmk: -DSPEC_CPU_AIX



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Peak Optimization Flags

C benchmarks:

400.perlbench: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx
-qvecnv1 -D_ILS_MACROS -blpdata

401.bzip2: Same as 400.perlbench

403.gcc: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage
-D_ILS_MACROS -qalloca -q64 -blpdata

429.mcf: basepeak = yes

445.gobmk: Same as 400.perlbench

456.hmmer: -O5 -qlargepage -D_ILS_MACROS -blpdata

458.sjeng: -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qlargepage -qenablevmx
-qvecnv1 -D_ILS_MACROS -blpdata

462.libquantum: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx
-qvecnv1 -D_ILS_MACROS -q64 -blpdata

464.h264ref: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage
-D_ILS_MACROS -blpdata

C++ benchmarks:

471.omnetpp: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx
-qvecnv1 -D_ILS_MACROS -qalign=natural -qrtti=all
-qinlglue -blpdata

473.astar: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx
-qvecnv1 -D_ILS_MACROS -blpdata

483.xalancbmk: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage
-D_ILS_MACROS -qinlglue -D__IBM_FAST_VECTOR -blpdata

Peak Other Flags

C benchmarks (except as noted below):

-qlanglvl=extc99 -qipa=noobject -qipa=threads -qsuppress=1500-036

400.perlbench: -qlanglvl=extc99 -bmaxdata:0x50000000 -qalias=noansi
-qipa=noobject -qipa=threads -qsuppress=1500-036

401.bzip2: -qlanglvl=extc99 -bmaxdata:0x4ffffffc -qipa=noobject
-qipa=threads -qsuppress=1500-036

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Peak Other Flags (Continued)

429.mcf: -qlanglvl=extc99 -bmaxdata:0x50000000 -qalias=noansi
-qipa=noobject -qipa=threads -qsuppress=1500-036

C++ benchmarks:

-bmaxdata:0x20000000 -qipa=noobject -qipa=threads -qsuppress=1500-036

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.12.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.12.xml

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For other inquiries, please contact webmaster@spec.org.

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