



SPEC® CINT2006 Result

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NEC Corporation

SPECint®2006 = 36.3

Express5800/GT110e (Intel Pentium G640)

SPECint_base2006 = 34.4

CPU2006 license: 9006

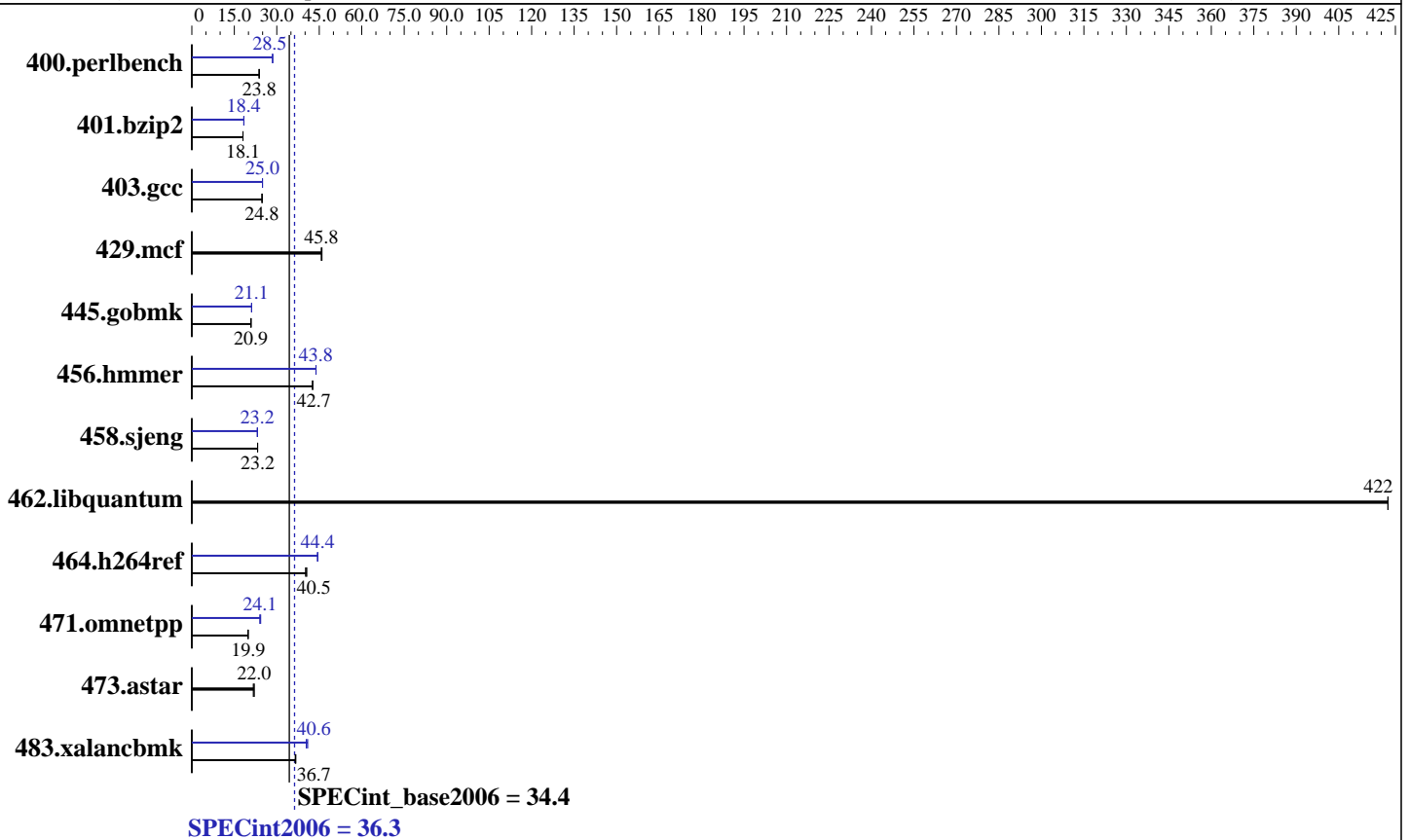
Test date: Jul-2012

Test sponsor: NEC Corporation

Hardware Availability: Jul-2012

Tested by: NEC Corporation

Software Availability: Feb-2012



Hardware

CPU Name: Intel Pentium G640
 CPU Characteristics:
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 3 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC, running at 1066 MHz and CL7)
 Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
 Kernel 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux;
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V8.1



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	411	23.7	<u>411</u>	<u>23.8</u>	410	23.8	<u>342</u>	<u>28.5</u>	342	28.5	343	28.5
401.bzip2	<u>534</u>	<u>18.1</u>	534	18.1	535	18.0	524	18.4	526	18.4	<u>525</u>	<u>18.4</u>
403.gcc	324	24.9	<u>325</u>	<u>24.8</u>	325	24.7	323	24.9	323	25.0	<u>323</u>	<u>25.0</u>
429.mcf	198	46.0	<u>199</u>	<u>45.8</u>	199	45.8	198	46.0	<u>199</u>	<u>45.8</u>	199	45.8
445.gobmk	502	20.9	502	20.9	<u>502</u>	<u>20.9</u>	<u>497</u>	<u>21.1</u>	497	21.1	497	21.1
456.hammer	<u>219</u>	<u>42.7</u>	219	42.6	219	42.7	<u>213</u>	<u>43.8</u>	213	43.8	213	43.9
458.sjeng	<u>521</u>	<u>23.2</u>	521	23.2	521	23.2	<u>523</u>	<u>23.2</u>	523	23.1	522	23.2
462.libquantum	49.1	422	49.1	422	<u>49.1</u>	<u>422</u>	49.1	422	49.1	422	<u>49.1</u>	<u>422</u>
464.h264ref	546	40.6	<u>547</u>	<u>40.5</u>	551	40.1	498	44.4	498	44.4	<u>498</u>	<u>44.4</u>
471.omnetpp	314	19.9	<u>314</u>	<u>19.9</u>	315	19.8	260	24.0	257	24.3	<u>259</u>	<u>24.1</u>
473.astar	319	22.0	<u>319</u>	<u>22.0</u>	324	21.7	319	22.0	<u>319</u>	<u>22.0</u>	324	21.7
483.xalancbmk	188	36.7	<u>188</u>	<u>36.7</u>	189	36.5	169	40.9	<u>170</u>	<u>40.6</u>	171	40.4

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

Default BIOS settings were used.

General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,scatter"

LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

OMP_NUM_THREADS = "2"

Added glibc-static-2.12-1.47.el6.x86_64.rpm
to enable static linking

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:

icc -m64

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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib64 -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64
400.perlbench: icc -m32
445.gobmk: icc -m32

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Peak Compiler Invocation (Continued)

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32

401.bzip2: -DSPEC_CPU_LP64

403.gcc: -DSPEC_CPU_LP64

429.mcf: -DSPEC_CPU_LP64

456.hmmer: -DSPEC_CPU_LP64

458.sjeng: -DSPEC_CPU_LP64

462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

473.astar: -DSPEC_CPU_LP64

483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-alloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-ra-region-strategy=block -ansi-alias
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.

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