



# SPEC® CINT2006 Result

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## NEC Corporation

**SPECint®2006 = 53.8**

Express5800/GT110f-S (Intel Core i3-4330)

**SPECint\_base2006 = 51.8**

CPU2006 license: 9006

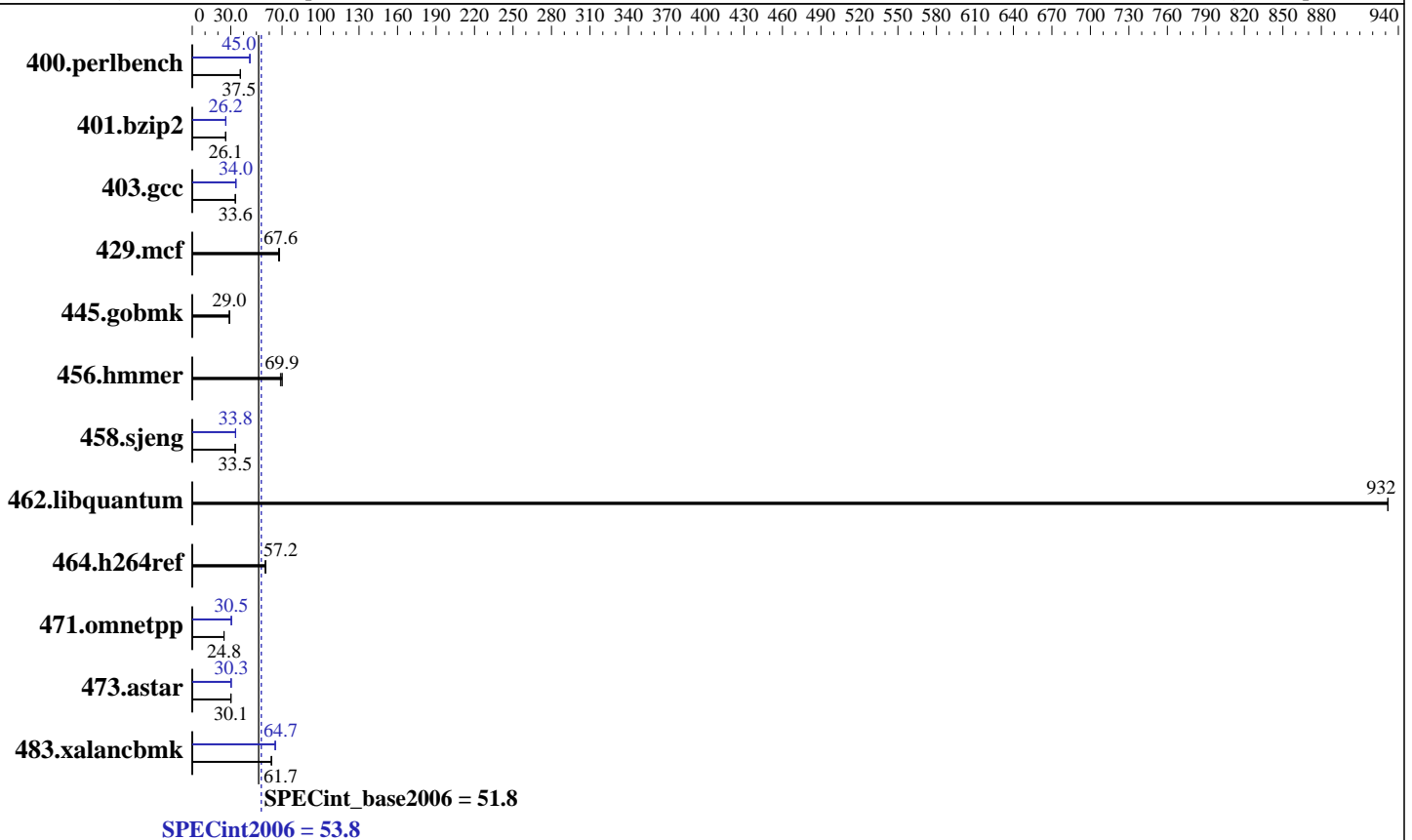
Test date: Oct-2013

Test sponsor: NEC Corporation

Hardware Availability: Oct-2013

Tested by: NEC Corporation

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Core i3-4330  
 CPU Characteristics: 3500  
 CPU MHz: 3500  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core  
 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: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC)  
 Disk Subsystem: 1 x 250 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
 Kernel 2.6.32-358.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 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	260	37.5	<b>260</b>	<b>37.5</b>	261	37.5	<u>217</u>	<u>45.0</u>	218	44.8	217	45.0
401.bzip2	<b>369</b>	<b>26.1</b>	372	26.0	368	26.2	370	26.1	<b>369</b>	<b>26.2</b>	368	26.2
403.gcc	<b>240</b>	<b>33.6</b>	239	33.7	240	33.6	236	34.0	237	34.0	<b>237</b>	<b>34.0</b>
429.mcf	135	67.3	<b>135</b>	<b>67.6</b>	134	68.1	135	67.3	<b>135</b>	<b>67.6</b>	134	68.1
445.gobmk	<b>362</b>	<b>29.0</b>	362	29.0	362	28.9	<b>362</b>	<b>29.0</b>	362	29.0	362	28.9
456.hammer	<b>133</b>	<b>69.9</b>	133	70.1	136	68.8	<b>133</b>	<b>69.9</b>	133	70.1	136	68.8
458.sjeng	361	33.5	<b>361</b>	<b>33.5</b>	361	33.5	358	33.8	<b>358</b>	<b>33.8</b>	358	33.8
462.libquantum	22.2	932	<b>22.2</b>	<b>932</b>	22.2	932	<u>22.2</u>	932	<b>22.2</b>	<b>932</b>	22.2	932
464.h264ref	389	56.9	387	57.2	<b>387</b>	<b>57.2</b>	389	56.9	387	57.2	<b>387</b>	<b>57.2</b>
471.omnetpp	252	24.8	253	24.8	<b>252</b>	<b>24.8</b>	205	30.5	205	30.5	<b>205</b>	<b>30.5</b>
473.astar	232	30.3	234	30.0	<b>233</b>	<b>30.1</b>	233	30.2	231	30.4	<b>231</b>	<b>30.3</b>
483.xalancbmk	111	62.0	<b>112</b>	<b>61.7</b>	112	61.6	<b>107</b>	<b>64.7</b>	107	64.6	106	64.8

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

BIOS Settings:  
Energy Performance: Performance

## General Notes

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

KMP\_AFFINITY = "granularity=fine,compact,1,0"

LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

OMP\_NUM\_THREADS = "2"

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64



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## 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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmarthheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64



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## Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

```

## Peak Optimization Flags

C benchmarks:

```

400.perlbench: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
          -opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: basepeak = yes

456.hmmmer: basepeak = yes

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
            -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
            -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

```

C++ benchmarks:

```

471.omnetpp: -xCORE-AVX2(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/sh -lsmartheap

```

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## Peak Optimization Flags (Continued)

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-ansi-alias -Wl,-z,muldefs -L/sh -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-ic14.0-official-linux64.20140128.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-ic14.0-official-linux64.20140128.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](mailto:webmaster@spec.org).

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