



# SPEC® CINT2006 Result

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## NEC Corporation

**SPECint®2006 = 57.4**

Express5800/T110f-S (Intel Xeon E3-1220 v3)

**SPECint\_base2006 = 55.3**

CPU2006 license: 9006

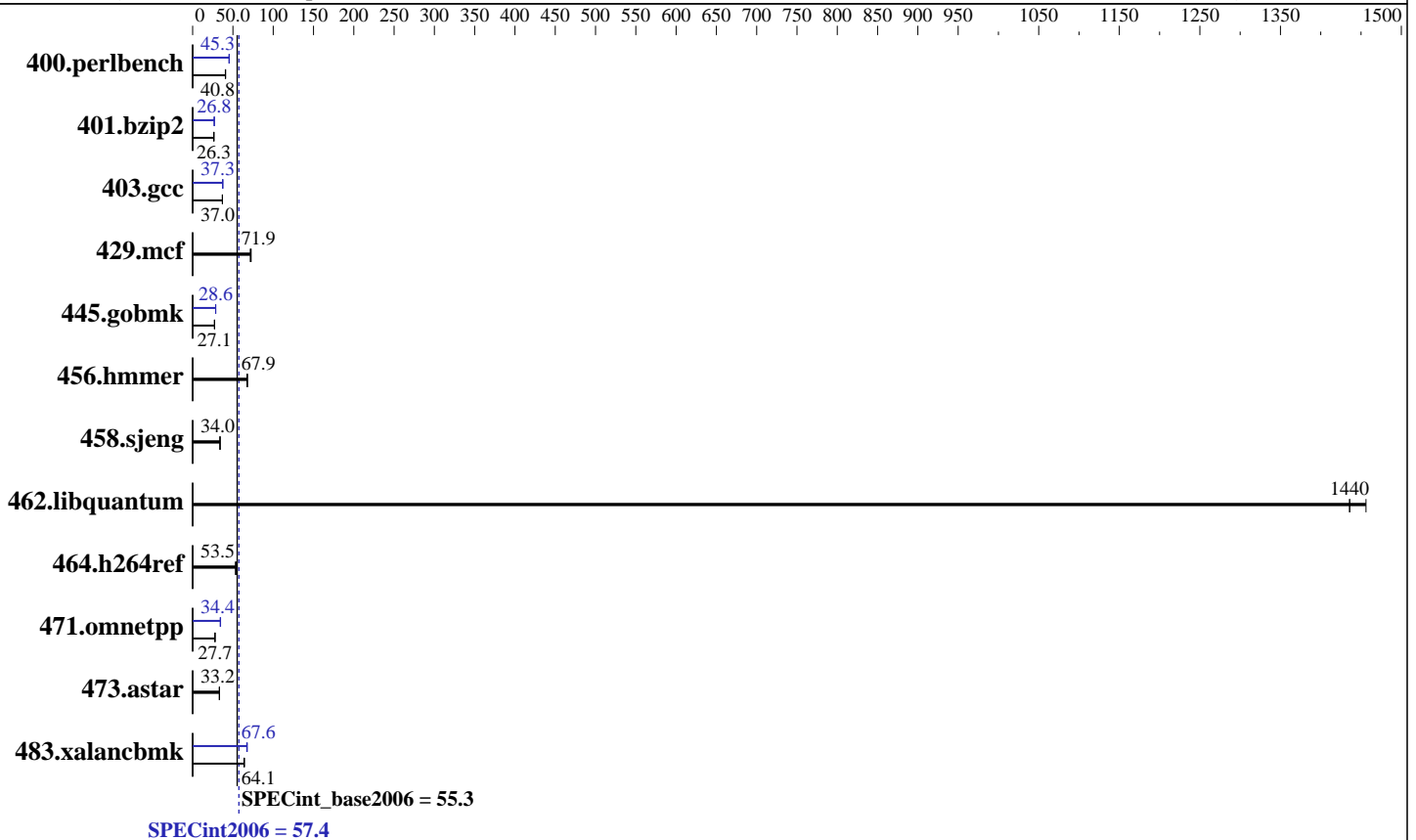
Test date: Jun-2013

Test sponsor: NEC Corporation

Hardware Availability: Jul-2013

Tested by: NEC Corporation

Software Availability: Mar-2013



### Hardware

CPU Name: Intel Xeon E3-1220 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 3100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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: 8 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 13.1.1.163 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	239	40.9	<u>239</u>	<u>40.8</u>	241	40.6	215	45.3	<u>216</u>	<u>45.3</u>	216	45.3
401.bzip2	367	26.3	366	26.4	<u>366</u>	<u>26.3</u>	360	26.8	359	26.9	<u>359</u>	<u>26.8</u>
403.gcc	218	37.0	<u>218</u>	<u>37.0</u>	219	36.8	215	37.4	<u>216</u>	<u>37.3</u>	216	37.3
429.mcf	126	72.6	127	71.6	<u>127</u>	<u>71.9</u>	126	72.6	127	71.6	<u>127</u>	<u>71.9</u>
445.gobmk	386	27.2	387	27.1	<u>387</u>	<u>27.1</u>	367	28.6	367	28.6	<u>367</u>	<u>28.6</u>
456.hammer	138	67.6	137	67.9	<u>137</u>	<u>67.9</u>	138	67.6	137	67.9	<u>137</u>	<u>67.9</u>
458.sjeng	356	34.0	356	34.0	<u>356</u>	<u>34.0</u>	356	34.0	356	34.0	<u>356</u>	<u>34.0</u>
462.libquantum	14.2	1460	<u>14.4</u>	<u>1440</u>	14.4	1440	14.2	1460	<u>14.4</u>	<u>1440</u>	14.4	1440
464.h264ref	413	53.6	<u>413</u>	<u>53.5</u>	415	53.4	413	53.6	<u>413</u>	<u>53.5</u>	415	53.4
471.omnetpp	<u>225</u>	<u>27.7</u>	225	27.8	226	27.6	<u>182</u>	<u>34.4</u>	182	34.3	180	34.7
473.astar	212	33.2	<u>211</u>	<u>33.2</u>	211	33.3	212	33.2	<u>211</u>	<u>33.2</u>	211	33.3
483.xalancbmk	<u>108</u>	<u>64.1</u>	108	63.7	107	64.2	102	67.7	<u>102</u>	<u>67.6</u>	103	67.2

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:  
LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"  
OMP\_NUM\_THREADS = "4"

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 -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

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
456.hmmer: -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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
           -ansi-alias

456.hmmer: basepeak = yes

458.sjeng: basepeak = yes

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

473.astar: basepeak = yes

```

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## Peak Optimization Flags (Continued)

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-ic13-official-linux64.20130702.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-ic13-official-linux64.20130702.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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