



# SPEC<sup>®</sup> CINT2006 Result

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**NEC Corporation**

**SPECint<sup>®</sup>2006 = 57.5**

**Express5800/R110f-1E (Intel Xeon E3-1220 v3)**

**SPECint\_base2006 = 55.2**

**CPU2006 license:** 9006

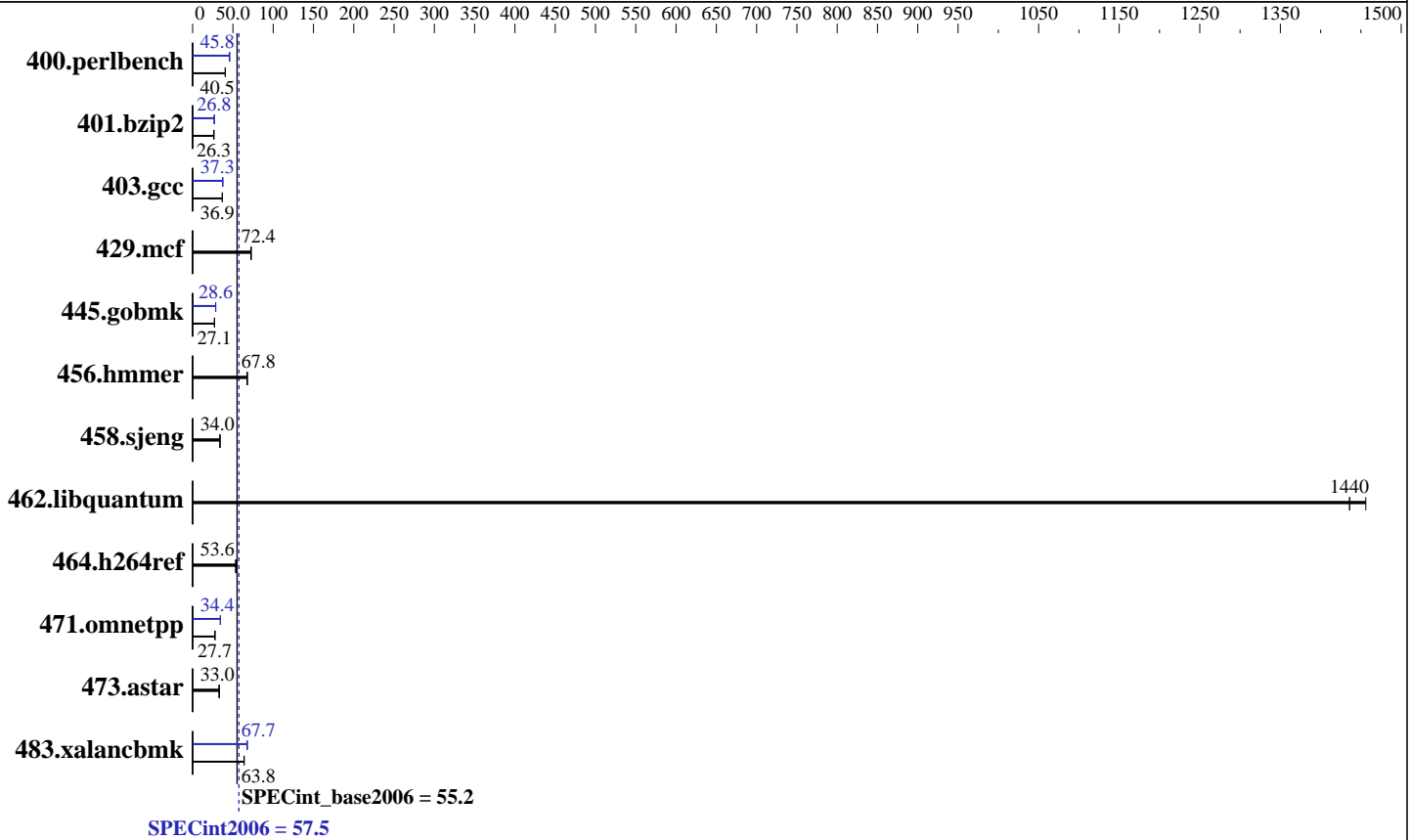
**Test sponsor:** NEC Corporation

**Tested by:** NEC Corporation

**Test date:** Jul-2013

**Hardware Availability:** Jul-2013

**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	241	40.5	<b><u>241</u></b>	<b><u>40.5</u></b>	241	40.6	213	45.9	<b><u>213</u></b>	<b><u>45.8</u></b>	214	45.7
401.bzip2	367	26.3	366	26.3	<b><u>366</u></b>	<b><u>26.3</u></b>	359	26.9	<b><u>360</u></b>	<b><u>26.8</u></b>	360	26.8
403.gcc	218	36.9	219	36.8	<b><u>218</u></b>	<b><u>36.9</u></b>	215	37.4	216	37.3	<b><u>216</u></b>	<b><u>37.3</u></b>
429.mcf	126	72.3	<b><u>126</u></b>	<b><u>72.4</u></b>	125	72.7	126	72.3	<b><u>126</u></b>	<b><u>72.4</u></b>	125	72.7
445.gobmk	<b><u>387</u></b>	<b><u>27.1</u></b>	386	27.2	387	27.1	367	28.6	367	28.6	<b><u>367</u></b>	<b><u>28.6</u></b>
456.hammer	138	67.6	<b><u>138</u></b>	<b><u>67.8</u></b>	137	67.9	138	67.6	<b><u>138</u></b>	<b><u>67.8</u></b>	137	67.9
458.sjeng	356	34.0	356	34.0	<b><u>356</u></b>	<b><u>34.0</u></b>	356	34.0	356	34.0	<b><u>356</u></b>	<b><u>34.0</u></b>
462.libquantum	14.2	1460	<b><u>14.4</u></b>	<b><u>1440</u></b>	14.4	1440	14.2	1460	<b><u>14.4</u></b>	<b><u>1440</u></b>	14.4	1440
464.h264ref	412	53.7	<b><u>413</u></b>	<b><u>53.6</u></b>	413	53.5	412	53.7	<b><u>413</u></b>	<b><u>53.6</u></b>	413	53.5
471.omnetpp	227	27.6	225	27.7	<b><u>226</u></b>	<b><u>27.7</u></b>	181	34.5	<b><u>182</u></b>	<b><u>34.4</u></b>	182	34.4
473.astar	211	33.2	<b><u>213</u></b>	<b><u>33.0</u></b>	214	32.8	211	33.2	<b><u>213</u></b>	<b><u>33.0</u></b>	214	32.8
483.xalancbmk	108	64.0	<b><u>108</u></b>	<b><u>63.8</u></b>	108	63.7	<b><u>102</u></b>	<b><u>67.7</u></b>	102	67.6	102	67.9

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.hmmcr: -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.hmmcr: 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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