



# SPEC® CINT2006 Result

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## NEC Corporation

**SPECint®2006 = 62.1**

Express5800/R120f-2E (Intel Xeon E5-2660 v3)

**SPECint\_base2006 = 59.4**

CPU2006 license: 9006

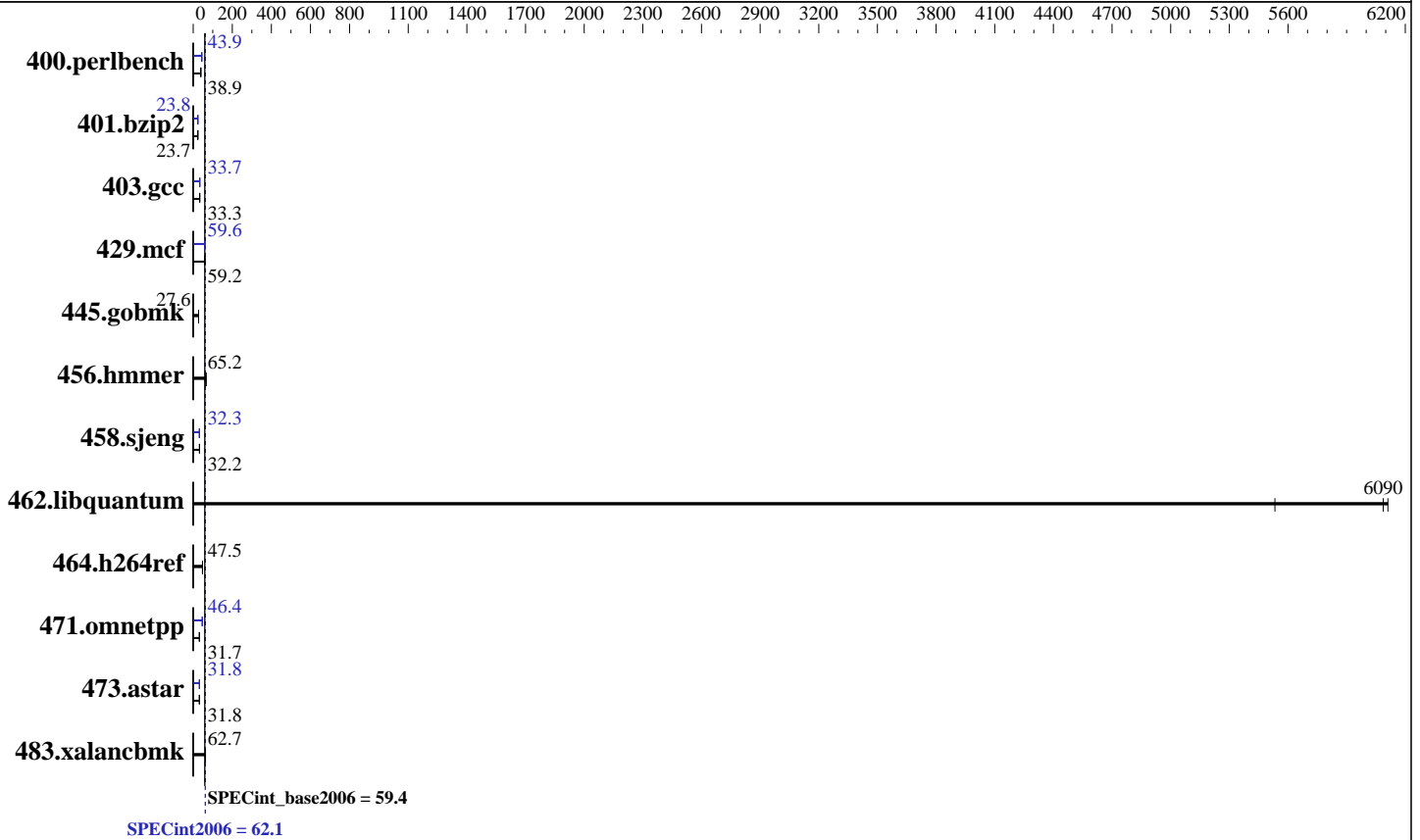
Test date: Dec-2014

Test sponsor: NEC Corporation

Hardware Availability: Jan-2015

Tested by: NEC Corporation

Software Availability: Jul-2014



### Hardware

CPU Name: Intel Xeon E5-2660 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 250 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)  
 Kernel 2.6.32-431.20.3.el6.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 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	<b><u>251</u></b>	<b><u>38.9</u></b>	251	38.9	250	39.0	<b><u>223</u></b>	<b><u>43.9</u></b>	<b><u>223</u></b>	<b><u>43.9</u></b>	222	44.0
401.bzip2	407	23.7	<b><u>408</u></b>	<b><u>23.7</u></b>	408	23.6	<b><u>405</u></b>	<b><u>23.8</u></b>	404	23.9	<b><u>405</u></b>	<b><u>23.8</u></b>
403.gcc	<b><u>242</u></b>	<b><u>33.3</u></b>	242	33.3	242	33.3	<b><u>239</u></b>	<b><u>33.7</u></b>	239	33.7	239	33.7
429.mcf	151	60.4	155	58.7	<b><u>154</u></b>	<b><u>59.2</u></b>	<b><u>153</u></b>	<b><u>59.6</u></b>	154	59.4	152	59.9
445.gobmk	<b><u>380</u></b>	<b><u>27.6</u></b>	380	27.6	381	27.6	<b><u>380</u></b>	<b><u>27.6</u></b>	380	27.6	381	27.6
456.hammer	<b><u>143</u></b>	<b><u>65.2</u></b>	143	65.3	143	65.2	<b><u>143</u></b>	<b><u>65.2</u></b>	143	65.3	143	65.2
458.sjeng	376	32.2	376	32.2	<b><u>376</u></b>	<b><u>32.2</u></b>	394	30.7	375	32.3	<b><u>375</u></b>	<b><u>32.3</u></b>
462.libquantum	<b><u>3.40</u></b>	<b><u>6090</u></b>	3.74	5530	3.39	6110	<b><u>3.40</u></b>	<b><u>6090</u></b>	3.74	5530	3.39	6110
464.h264ref	465	47.6	466	47.4	<b><u>466</u></b>	<b><u>47.5</u></b>	465	47.6	466	47.4	<b><u>466</u></b>	<b><u>47.5</u></b>
471.omnetpp	<b><u>197</u></b>	<b><u>31.7</u></b>	198	31.6	197	31.8	<b><u>135</u></b>	<b><u>46.4</u></b>	135	46.4	134	46.5
473.astar	220	31.9	<b><u>221</u></b>	<b><u>31.8</u></b>	222	31.6	<b><u>221</u></b>	<b><u>31.8</u></b>	220	31.9	221	31.7
483.xalancbmk	<b><u>110</u></b>	<b><u>62.7</u></b>	110	62.9	110	62.7	<b><u>110</u></b>	<b><u>62.7</u></b>	110	62.9	110	62.7

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:  
Power Management Policy: Custom  
Energy Performance: Performance  
Patrol Scrub: Disabled  
Hyper-Threading: Disabled

## General Notes

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

KMP\_AFFINITY = "granularity=fine,compact"

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

OMP\_NUM\_THREADS = "20"

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:  
-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 -L/opt/intel/composer\_xe\_2015/lib/ia32

C++ benchmarks (except as noted below):  
icpc -m64

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## Peak Compiler Invocation (Continued)

471.omnetpp: icpc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

## 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.hmmr: -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\_LP64 -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: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel  
 -opt-prefetch -auto-p32

445.gobmk: basepeak = yes

456.hmmr: 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

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## Peak Optimization Flags (Continued)

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 -lsmarheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-auto-p32 -Wl,-z,muldefs -L/sh -lsmarheap64

483.xalancbmk: basepeak = yes

## 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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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