



# SPEC® CINT2006 Result

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## NEC Corporation

**SPECint®2006 = 56.5**

Express5800/E120f-M (Intel Xeon E5-2650 v3)

**SPECint\_base2006 = 54.2**

CPU2006 license: 9006

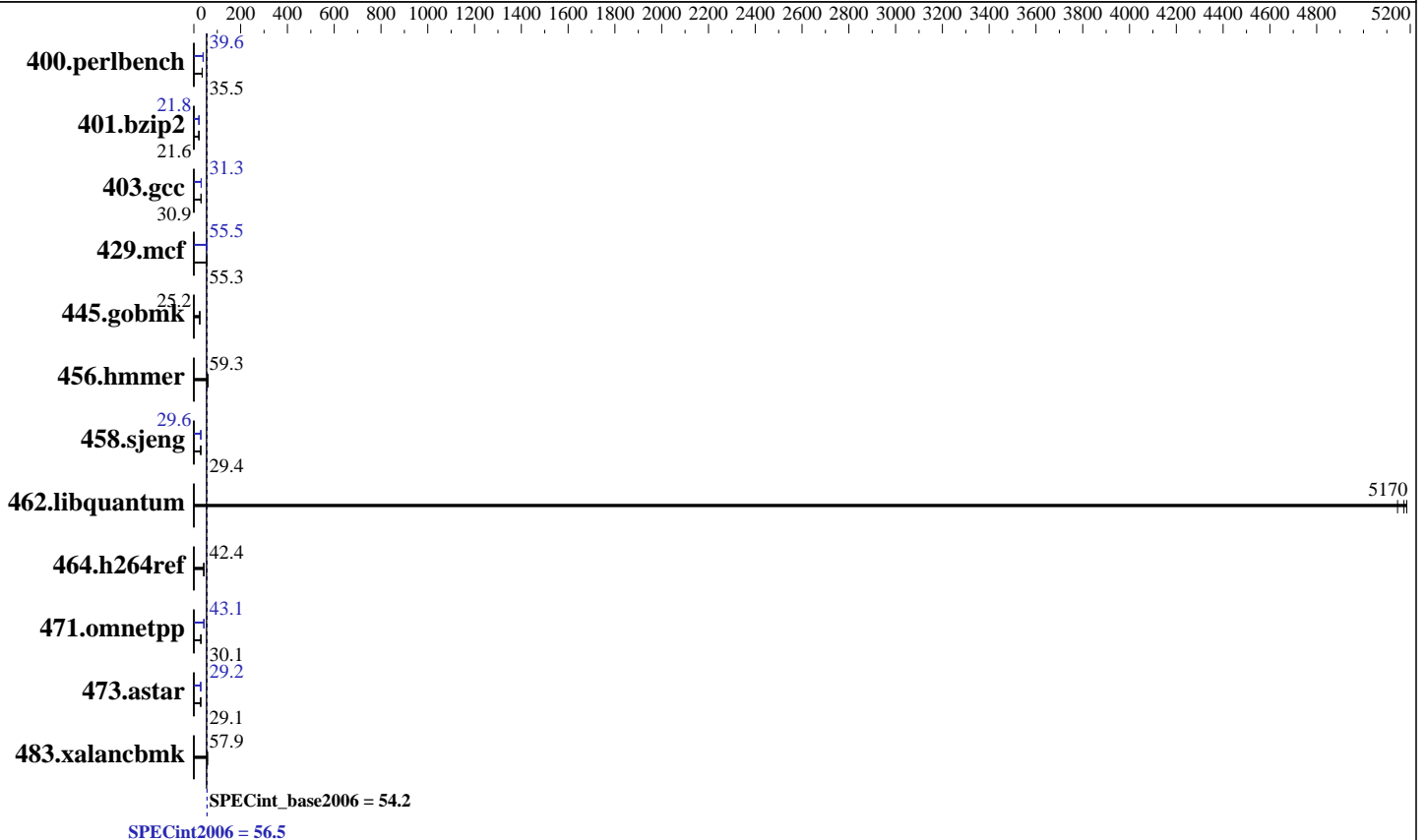
Test date: Feb-2015

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: Jul-2014



### Hardware

CPU Name: Intel Xeon E5-2650 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz  
 CPU MHz: 2300  
 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	275	35.5	274	35.6	<u>275</u>	<u>35.5</u>	247	39.5	246	39.7	<u>247</u>	<u>39.6</u>
401.bzip2	448	21.6	<u>447</u>	<u>21.6</u>	447	21.6	443	21.8	<u>444</u>	<u>21.8</u>	444	21.7
403.gcc	261	30.9	261	30.9	<u>261</u>	<u>30.9</u>	257	31.3	257	31.4	<u>257</u>	<u>31.3</u>
429.mcf	164	55.7	171	53.3	<u>165</u>	<u>55.3</u>	165	55.3	<u>164</u>	<u>55.5</u>	162	56.2
445.gobmk	<u>417</u>	<u>25.2</u>	418	25.1	417	25.2	<u>417</u>	<u>25.2</u>	418	25.1	417	25.2
456.hmmer	157	59.3	<u>157</u>	<u>59.3</u>	157	59.4	157	59.3	<u>157</u>	<u>59.3</u>	157	59.4
458.sjeng	<u>411</u>	<u>29.4</u>	411	29.4	411	29.5	409	29.6	409	29.6	<u>409</u>	<u>29.6</u>
462.libquantum	<u>4.01</u>	<u>5170</u>	4.03	5150	4.00	5190	<u>4.01</u>	<u>5170</u>	4.03	5150	4.00	5190
464.h264ref	<u>521</u>	<u>42.4</u>	518	42.7	523	42.3	<u>521</u>	<u>42.4</u>	518	42.7	523	42.3
471.omnetpp	207	30.3	210	29.7	<u>208</u>	<u>30.1</u>	146	42.9	145	43.1	<u>145</u>	<u>43.1</u>
473.astar	240	29.3	241	29.1	<u>241</u>	<u>29.1</u>	240	29.2	<u>240</u>	<u>29.2</u>	242	29.0
483.xalancbmk	119	57.9	119	57.9	<u>119</u>	<u>57.9</u>	119	57.9	119	57.9	<u>119</u>	<u>57.9</u>

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-RevC.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-RevC.xml>

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

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