



SPEC® CINT2006 Result

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NEC Corporation

SPECint®2006 = **62.1**

Express5800/B120f-h (Intel Xeon E5-2640 v3)

SPECint_base2006 = **59.3**

CPU2006 license: 9006

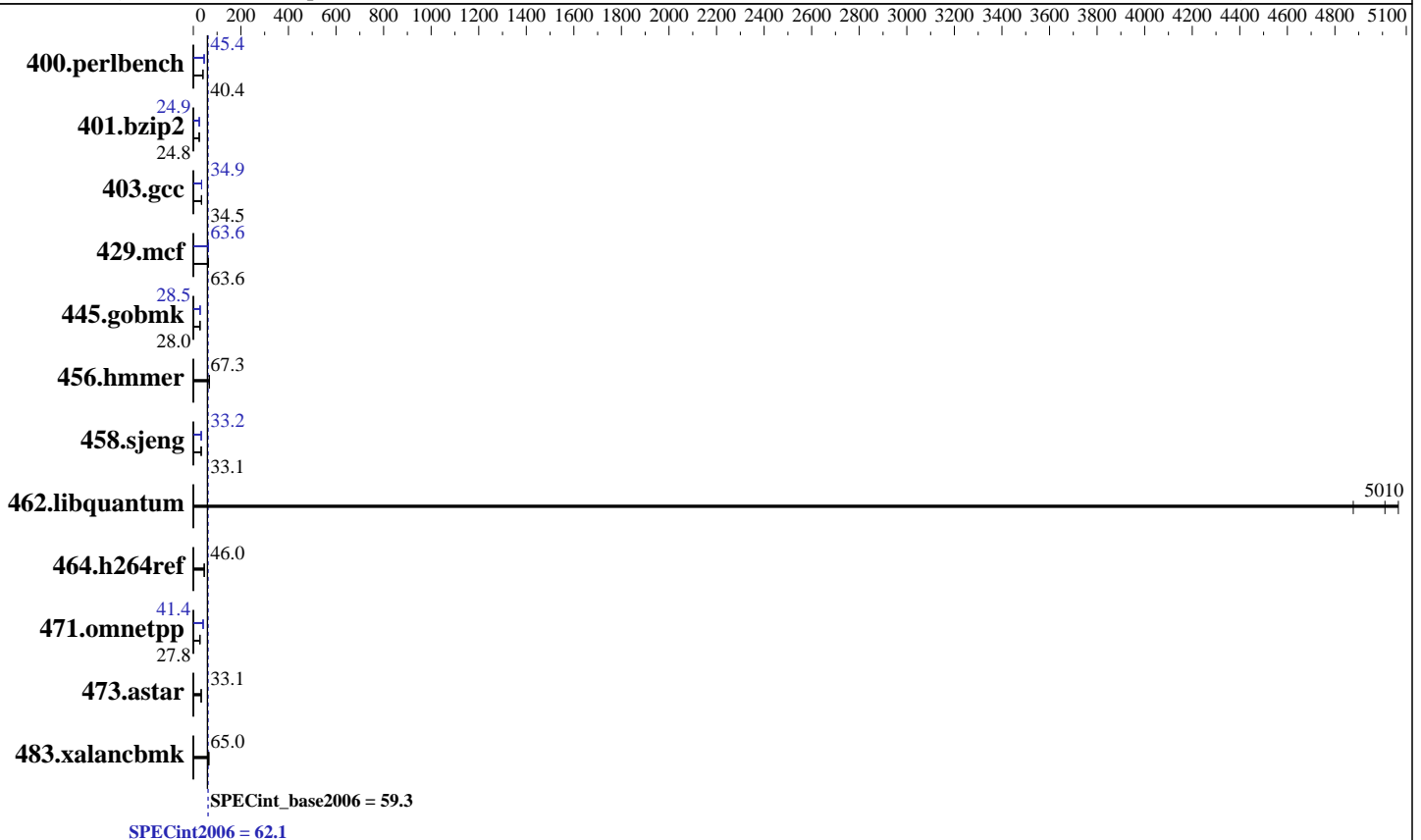
Test date: Mar-2015

Test sponsor: NEC Corporation

Hardware Availability: Jun-2015

Tested by: NEC Corporation

Software Availability: Oct-2014



Hardware

CPU Name: Intel Xeon E5-2640 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
 Disk Subsystem: 1 x 400 GB SATA, SSD
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.6 (Santiago)
 Kernel 2.6.32-504.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	<u>242</u>	<u>40.4</u>	242	40.3	242	40.4	215	45.5	215	45.4	<u>215</u>	<u>45.4</u>
401.bzip2	<u>390</u>	<u>24.8</u>	389	24.8	391	24.7	387	24.9	387	24.9	<u>387</u>	<u>24.9</u>
403.gcc	234	34.5	<u>234</u>	<u>34.5</u>	233	34.5	<u>231</u>	<u>34.9</u>	231	34.8	231	34.9
429.mcf	143	64.0	<u>143</u>	<u>63.6</u>	145	62.7	143	63.7	<u>143</u>	<u>63.6</u>	144	63.2
445.gobmk	<u>374</u>	<u>28.0</u>	373	28.1	374	28.0	368	28.5	<u>368</u>	<u>28.5</u>	368	28.5
456.hammer	139	67.3	<u>139</u>	<u>67.3</u>	139	67.4	139	67.3	<u>139</u>	<u>67.3</u>	139	67.4
458.sjeng	366	33.1	<u>366</u>	<u>33.1</u>	366	33.1	<u>364</u>	<u>33.2</u>	365	33.1	364	33.3
462.libquantum	4.09	5070	<u>4.14</u>	<u>5010</u>	4.25	4880	4.09	5070	<u>4.14</u>	<u>5010</u>	4.25	4880
464.h264ref	<u>481</u>	<u>46.0</u>	482	45.9	481	46.0	<u>481</u>	<u>46.0</u>	482	45.9	481	46.0
471.omnetpp	227	27.5	<u>224</u>	<u>27.8</u>	224	27.9	<u>151</u>	<u>41.4</u>	153	40.8	151	41.4
473.astar	213	33.0	<u>212</u>	<u>33.1</u>	212	33.1	213	33.0	<u>212</u>	<u>33.1</u>	212	33.1
483.xalancbmk	<u>106</u>	<u>65.0</u>	106	64.9	106	65.1	<u>106</u>	<u>65.0</u>	106	64.9	106	65.1

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
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 = "16"

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

445.gobmk: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):

icpc -m64

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
 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_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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
 -ansi-alias

456.hmmer: 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

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Peak Optimization Flags (Continued)

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

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-B120f-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-B120f-RevB.xml>

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Jun 30 16:15:38 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 June 2015.