



# SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## NEC Corporation

SPECint®\_rate2006 = 206

Express5800/R110h-1 (Intel Xeon E3-1220 v5)

SPECint\_rate\_base2006 = 199

CPU2006 license: 9006

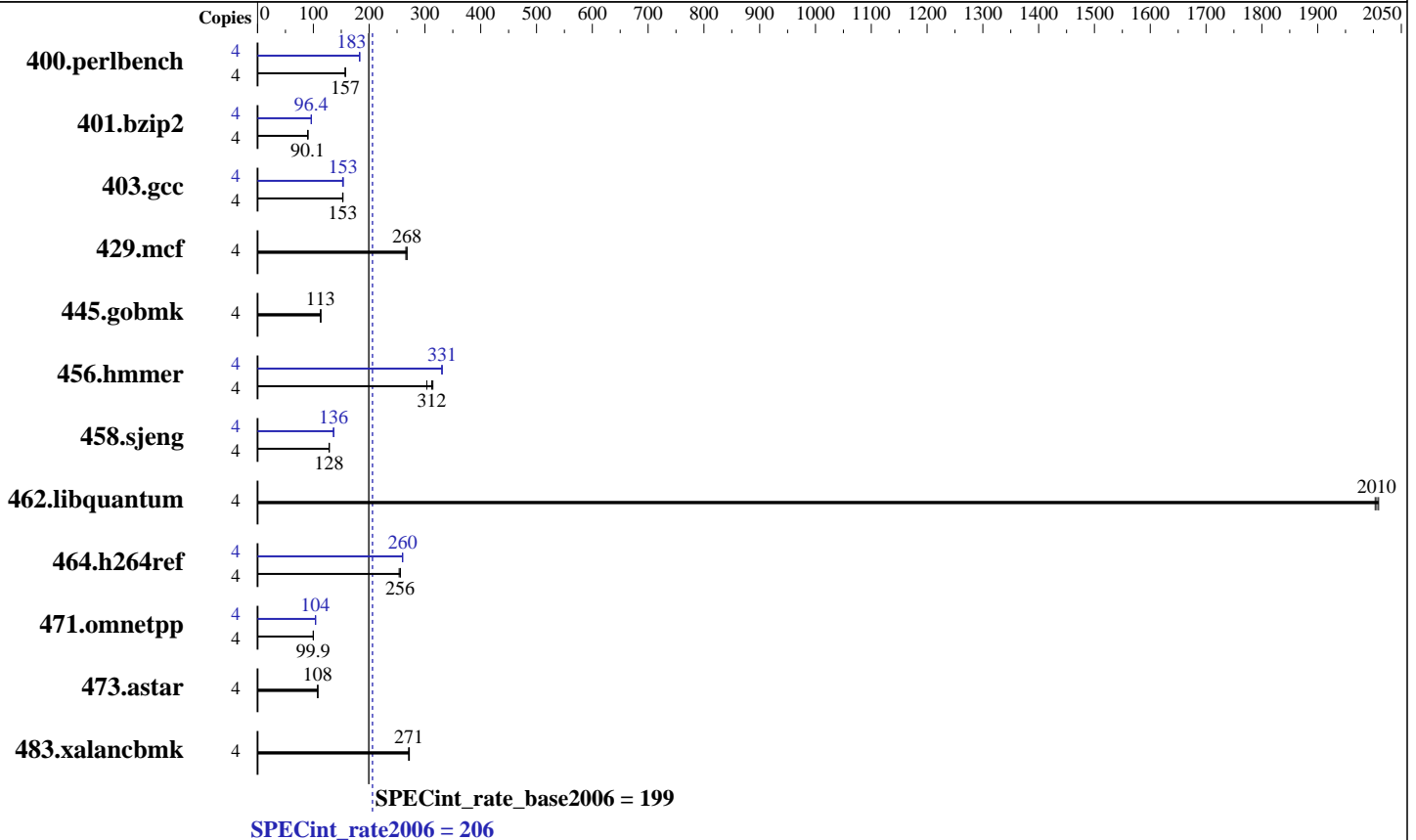
Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015



### Hardware

CPU Name: Intel Xeon E3-1220 v5  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 3000  
 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 PC4-2133P-E)  
 Disk Subsystem: 1 x 500 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo)  
 Kernel 3.10.0-327.el7.x86\_64  
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## NEC Corporation

SPECint\_rate2006 = 206

Express5800/R110h-1 (Intel Xeon E3-1220 v5)

SPECint\_rate\_base2006 = 199

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	248	157	<b><u>248</u></b>	<b><u>157</u></b>	249	157	4	214	183	<b><u>214</u></b>	<b><u>183</u></b>	214	183
401.bzip2	4	428	90.2	428	90.1	<b><u>428</u></b>	<b><u>90.1</u></b>	4	<b><u>401</u></b>	<b><u>96.4</u></b>	400	96.5	401	96.2
403.gcc	4	210	153	<b><u>211</u></b>	<b><u>153</u></b>	211	152	4	211	152	<b><u>210</u></b>	<b><u>153</u></b>	210	154
429.mcf	4	<b><u>136</u></b>	<b><u>268</u></b>	136	268	137	266	4	<b><u>136</u></b>	<b><u>268</u></b>	136	268	137	266
445.gobmk	4	<b><u>371</u></b>	<b><u>113</u></b>	371	113	370	113	4	<b><u>371</u></b>	<b><u>113</u></b>	371	113	370	113
456.hammer	4	<b><u>120</u></b>	<b><u>312</u></b>	123	303	119	314	4	<b><u>113</u></b>	<b><u>331</u></b>	113	331	113	330
458.sjeng	4	377	128	<b><u>377</u></b>	<b><u>128</u></b>	377	128	4	355	136	<b><u>355</u></b>	<b><u>136</u></b>	355	136
462.libquantum	4	<b><u>41.3</u></b>	<b><u>2010</u></b>	41.2	2010	41.4	2000	4	<b><u>41.3</u></b>	<b><u>2010</u></b>	41.2	2010	41.4	2000
464.h264ref	4	346	256	<b><u>346</u></b>	<b><u>256</u></b>	349	254	4	341	260	341	260	<b><u>341</u></b>	<b><u>260</u></b>
471.omnetpp	4	250	100	250	99.9	<b><u>250</u></b>	<b><u>99.9</u></b>	4	<b><u>241</u></b>	<b><u>104</u></b>	241	104	241	104
473.astar	4	261	108	<b><u>260</u></b>	<b><u>108</u></b>	260	108	4	261	108	<b><u>260</u></b>	<b><u>108</u></b>	260	108
483.xalancbmk	4	<b><u>102</u></b>	<b><u>271</u></b>	102	271	101	272	4	<b><u>102</u></b>	<b><u>271</u></b>	102	271	101	272

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS Settings:  
Power Management Policy: Custom  
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"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/transparent\_hugepage/enabled



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECint\_rate2006 = 206

Express5800/R110h-1 (Intel Xeon E3-1220 v5)

SPECint\_rate\_base2006 = 199

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

## Base Compiler Invocation

C benchmarks:

icc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

## Base Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32  
 401.bzip2: -D\_FILE\_OFFSET\_BITS=64  
 403.gcc: -D\_FILE\_OFFSET\_BITS=64  
 429.mcf: -D\_FILE\_OFFSET\_BITS=64  
 445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
 456.hmmer: -D\_FILE\_OFFSET\_BITS=64  
 458.sjeng: -D\_FILE\_OFFSET\_BITS=64  
 462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
 471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
 473.astar: -D\_FILE\_OFFSET\_BITS=64  
 483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECint\_rate2006 = 206

Express5800/R110h-1 (Intel Xeon E3-1220 v5)

SPECint\_rate\_base2006 = 199

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

## Peak Compiler Invocation (Continued)

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

## Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
 401.bzip2: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
 403.gcc: -D\_FILE\_OFFSET\_BITS=64  
 429.mcf: -D\_FILE\_OFFSET\_BITS=64  
 445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
 456.hmmer: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
 458.sjeng: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
 462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
 471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
 473.astar: -D\_FILE\_OFFSET\_BITS=64  
 483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch  
 -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: basepeak = yes

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECint\_rate2006 = 206

Express5800/R110h-1 (Intel Xeon E3-1220 v5)

SPECint\_rate\_base2006 = 199

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

## Peak Optimization Flags (Continued)

456.hmmcr: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4  
-auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -ansi-alias  
-opt-ra-region-strategy=block -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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110h-RevA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110h-RevA.xml>



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECint\_rate2006 = 206

Express5800/R110h-1 (Intel Xeon E3-1220 v5)

SPECint\_rate\_base2006 = 199

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Dec-2015

Hardware Availability: Mar-2016

Software Availability: Nov-2015

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Feb 9 17:21:15 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 9 February 2016.