



# SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## NEC Corporation

**SPECint®2006 = 35.8**

Express5800/R120g-1E (Intel Xeon E5-2603 v4)

**SPECint\_base2006 = 34.7**

CPU2006 license: 9006

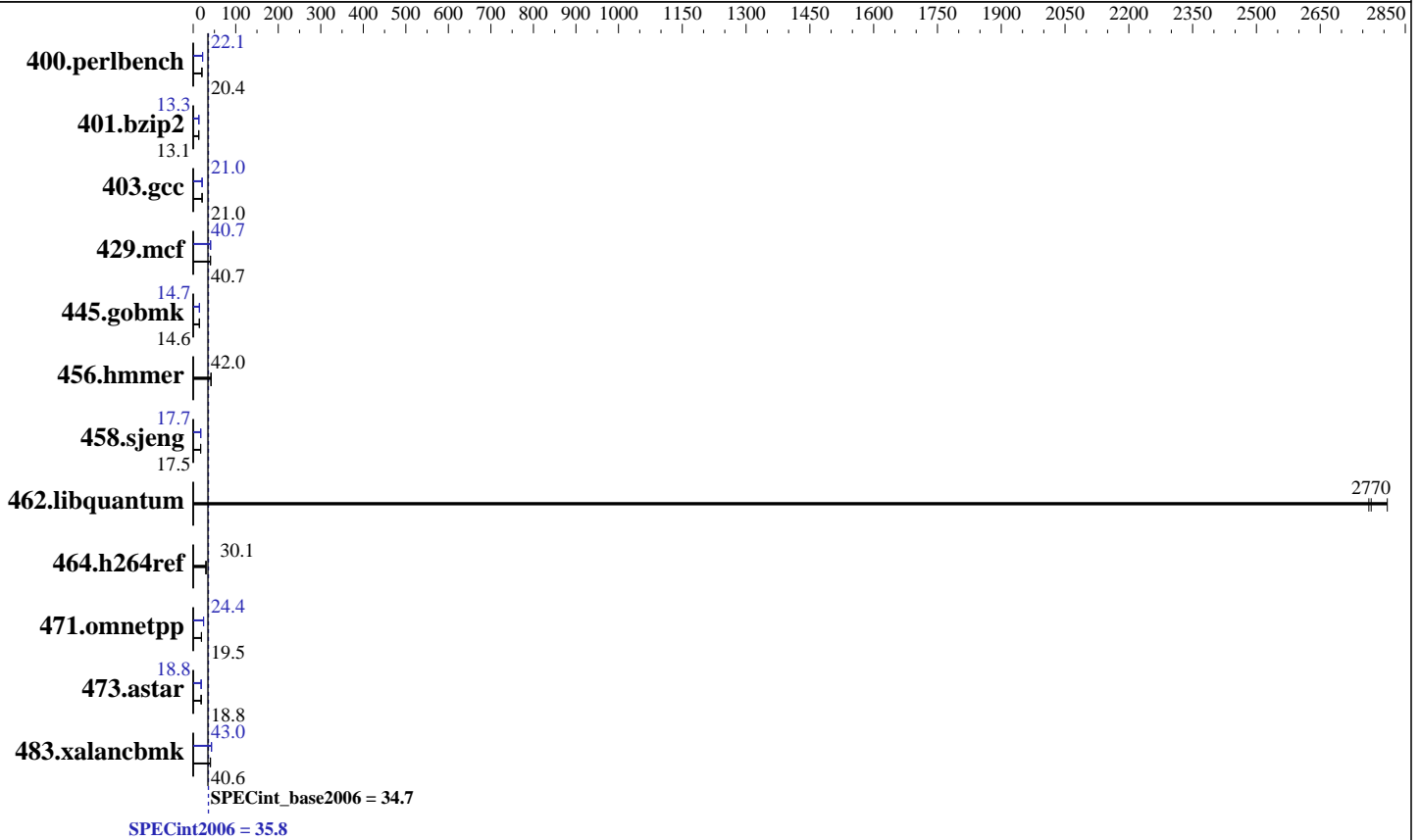
Test date: May-2016

Test sponsor: NEC Corporation

Hardware Availability: Jun-2016

Tested by: NEC Corporation

Software Availability: Jan-2016



### Hardware

CPU Name: Intel Xeon E5-2603 v4  
 CPU Characteristics:  
 CPU MHz: 1700  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 1866 MHz)  
 Disk Subsystem: 1 x 1 TB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo)  
 Kernel 3.10.0-327.4.5.el7.x86\_64  
 Compiler: C/C++: Version 16.0.0.101 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 V10.2



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## NEC Corporation

SPECint2006 = **35.8**

Express5800/R120g-1E (Intel Xeon E5-2603 v4)

SPECint\_base2006 = **34.7**

CPU2006 license: 9006

Test date: May-2016

Test sponsor: NEC Corporation

Hardware Availability: Jun-2016

Tested by: NEC Corporation

Software Availability: Jan-2016

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	478	20.5	478	20.4	<b>478</b>	<b>20.4</b>	<b>441</b>	<b>22.1</b>	442	22.1	441	22.2
401.bzip2	742	13.0	738	13.1	<b>739</b>	<b>13.1</b>	<b>728</b>	<b>13.3</b>	729	13.2	728	13.3
403.gcc	384	21.0	<b>384</b>	<b>21.0</b>	384	21.0	383	21.0	<b>383</b>	<b>21.0</b>	385	20.9
429.mcf	226	40.3	223	40.9	<b>224</b>	<b>40.7</b>	<b>224</b>	<b>40.7</b>	225	40.5	222	41.2
445.gobmk	720	14.6	<b>721</b>	<b>14.6</b>	721	14.6	<b>715</b>	<b>14.7</b>	715	14.7	716	14.7
456.hammer	<b>222</b>	<b>42.0</b>	222	41.9	222	42.1	<b>222</b>	<b>42.0</b>	222	41.9	222	42.1
458.sjeng	<b>691</b>	<b>17.5</b>	692	17.5	691	17.5	683	17.7	684	17.7	<b>683</b>	<b>17.7</b>
462.libquantum	7.38	2810	7.50	2760	<b>7.48</b>	<b>2770</b>	7.38	2810	7.50	2760	<b>7.48</b>	<b>2770</b>
464.h264ref	737	30.0	734	30.2	<b>735</b>	<b>30.1</b>	737	30.0	734	30.2	<b>735</b>	<b>30.1</b>
471.omnetpp	<b>321</b>	<b>19.5</b>	321	19.5	324	19.3	256	24.4	<b>256</b>	<b>24.4</b>	256	24.4
473.astar	374	18.8	373	18.8	<b>374</b>	<b>18.8</b>	<b>374</b>	<b>18.8</b>	375	18.7	373	18.8
483.xalancbmk	172	40.1	<b>170</b>	<b>40.6</b>	170	40.6	<b>160</b>	<b>43.0</b>	161	42.9	160	43.0

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

## Submit Notes

The config file option 'submit' was used.

## 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  
 Snoop Mode: Home Snoop with Directory

## 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 = "12"

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

SPECint2006 = 35.8

Express5800/R120g-1E (Intel Xeon E5-2603 v4)

SPECint\_base2006 = 34.7

CPU2006 license: 9006

Test date: May-2016

Test sponsor: NEC Corporation

Hardware Availability: Jun-2016

Tested by: NEC Corporation

Software Availability: Jan-2016

## Base Compiler Invocation

C benchmarks:

icc -m64

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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECint2006 = 35.8

Express5800/R120g-1E (Intel Xeon E5-2603 v4)

SPECint\_base2006 = 34.7

CPU2006 license: 9006

Test date: May-2016

Test sponsor: NEC Corporation

Hardware Availability: Jun-2016

Tested by: NEC Corporation

Software Availability: Jan-2016

## Peak Compiler Invocation (Continued)

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

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

C++ benchmarks (except as noted below):

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

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32

401.bzip2: -DSPEC\_CPU\_LP64

403.gcc: -DSPEC\_CPU\_LP64

429.mcf: -DSPEC\_CPU\_LP64

445.gobmk: -D\_FILE\_OFFSET\_BITS=64

456.hmmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

464.h264ref: -DSPEC\_CPU\_LP64

471.omnetpp: -D\_FILE\_OFFSET\_BITS=64

473.astar: -DSPEC\_CPU\_LP64

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) -opt-prefetch  
-ansi-alias

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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECint2006 = 35.8

Express5800/R120g-1E (Intel Xeon E5-2603 v4)

SPECint\_base2006 = 34.7

CPU2006 license: 9006

Test date: May-2016

Test sponsor: NEC Corporation

Hardware Availability: Jun-2016

Tested by: NEC Corporation

Software Availability: Jan-2016

## Peak Optimization Flags (Continued)

456.hmmcr: basepeak = yes

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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

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-ic16.0-official-linux64.html>

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



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECint2006 = 35.8

Express5800/R120g-1E (Intel Xeon E5-2603 v4)

SPECint\_base2006 = 34.7

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: May-2016

Hardware Availability: Jun-2016

Software Availability: Jan-2016

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 Thu Jun 30 14:05:35 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 14 June 2016.