



# SPEC® CINT2006 Result

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## NEC Corporation

**SPECint®2006 = 47.7**

Express5800/GT110i (Intel Celeron G3930)

**SPECint\_base2006 = 46.1**

CPU2006 license: 9006

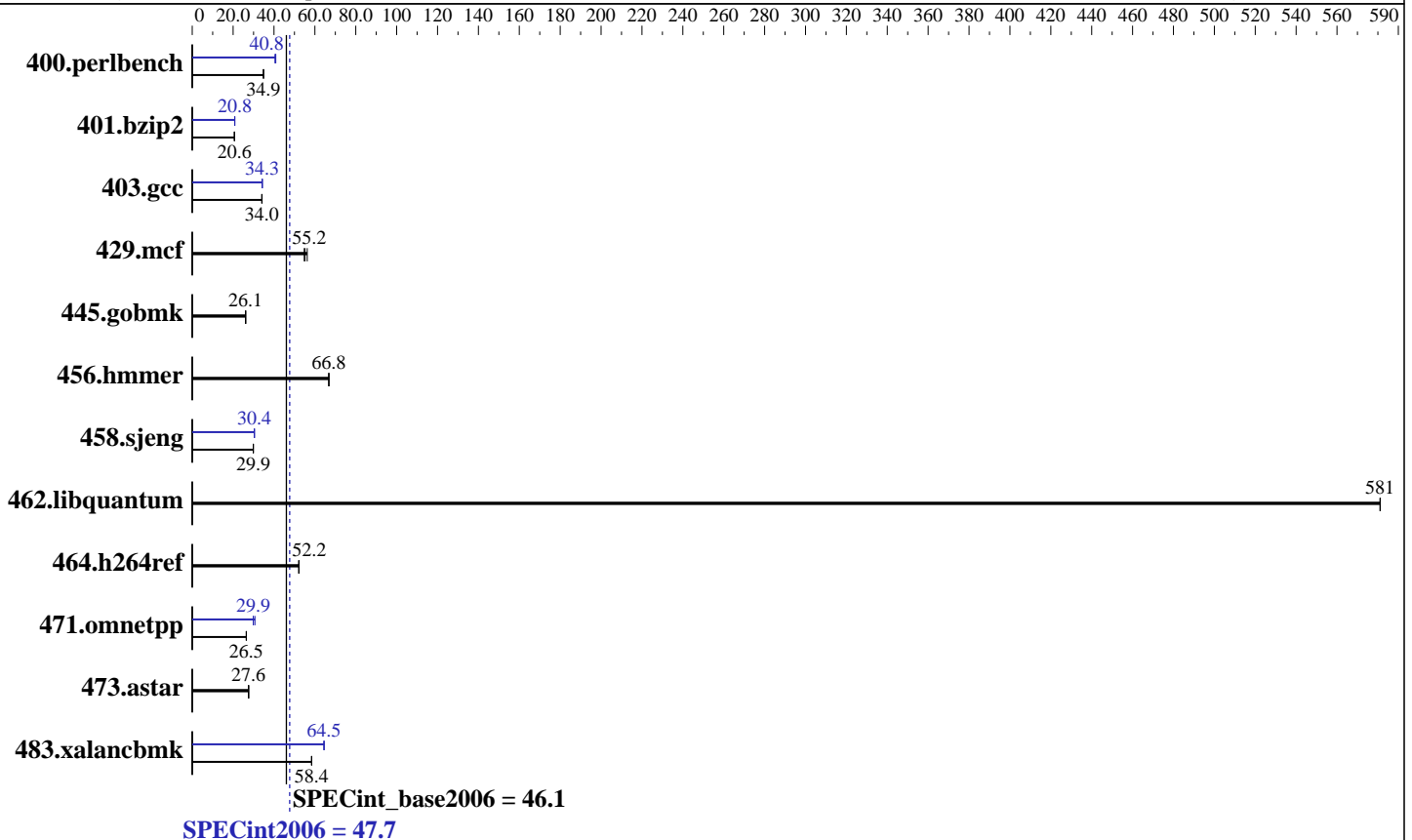
Test date: May-2017

Test sponsor: NEC Corporation

Hardware Availability: Apr-2017

Tested by: NEC Corporation

Software Availability: Jan-2017



### Hardware

CPU Name: Intel Celeron G3930  
 CPU Characteristics:  
 CPU MHz: 2900  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 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: 2 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 32 GB (2 x 16 GB 2Rx8 PC4-2400T-E, running at 2133 MHz)  
 Disk Subsystem: 1 x 1 TB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)  
 Kernel 3.10.0-514.6.1.el7.x86\_64  
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler 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



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	280	34.9	280	34.9	<b>280</b>	<b>34.9</b>	242	40.5	239	40.9	<b>239</b>	<b>40.8</b>
401.bzip2	466	20.7	<b>468</b>	<b>20.6</b>	468	20.6	<b>464</b>	<b>20.8</b>	463	20.9	465	20.8
403.gcc	236	34.2	236	34.0	<b>236</b>	<b>34.0</b>	235	34.3	<b>235</b>	<b>34.3</b>	235	34.2
429.mcf	<b>165</b>	<b>55.2</b>	166	54.8	162	56.3	<b>165</b>	<b>55.2</b>	166	54.8	162	56.3
445.gobmk	<b>401</b>	<b>26.1</b>	402	26.1	401	26.1	<b>401</b>	<b>26.1</b>	402	26.1	401	26.1
456.hammer	<b>140</b>	<b>66.8</b>	140	66.8	140	66.9	<b>140</b>	<b>66.8</b>	140	66.8	140	66.9
458.sjeng	<b>405</b>	<b>29.9</b>	405	29.9	405	29.9	<b>398</b>	<b>30.4</b>	398	30.4	398	30.4
462.libquantum	<b>35.7</b>	<b>581</b>	35.7	581	35.7	581	<b>35.7</b>	<b>581</b>	35.7	581	35.7	581
464.h264ref	424	52.2	425	52.1	<b>424</b>	<b>52.2</b>	424	52.2	425	52.1	<b>424</b>	<b>52.2</b>
471.omnetpp	236	26.4	236	26.5	<b>236</b>	<b>26.5</b>	209	29.9	<b>209</b>	<b>29.9</b>	204	30.7
473.astar	<b>254</b>	<b>27.6</b>	256	27.4	254	27.7	<b>254</b>	<b>27.6</b>	256	27.4	254	27.7
483.xalancbmk	118	58.4	118	58.5	<b>118</b>	<b>58.4</b>	<b>107</b>	<b>64.5</b>	107	64.5	107	64.4

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

## General Notes

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

KMP\_AFFINITY = "granularity=fine,scatter"

LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh10.2"

OMP\_NUM\_THREADS = "2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM

memory using Redhat Enterprise Linux 7.2

Transparent Huge Pages enabled by default.



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## 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:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch -auto-p32

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh10.2 -lsmartheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

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## Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

C++ benchmarks (except as noted below):

`icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

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: `-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: `-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: `-prof-gen(pass 1) -prof-use(pass 2) -xSSE4.2(pass 2)`  
`-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)`  
`-no-prec-div(pass 2) -qopt-prefetch`

401.bzip2: `-prof-gen(pass 1) -prof-use(pass 2) -xSSE4.2(pass 2)`  
`-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)`  
`-no-prec-div -auto-ilp32 -qopt-prefetch`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div -inline-alloc`  
`-qopt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `basepeak = yes`

456.hmmer: `basepeak = yes`

458.sjeng: `-prof-gen(pass 1) -prof-use(pass 2) -xSSE4.2(pass 2)`  
`-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)`  
`-no-prec-div(pass 2) -unroll4`

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<b>CPU2006 license:</b> 9006	<b>Test date:</b> May-2017
<b>Test sponsor:</b> NEC Corporation	<b>Hardware Availability:</b> Apr-2017
<b>Tested by:</b> NEC Corporation	<b>Software Availability:</b> Jan-2017

## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.2(pass 2)  
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -qopt-ra-region-strategy=block  
 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch  
 -Wl,-z,muldefs -L/sh10.2 -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-ic17.0-official-linux64.html>  
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110i-RevA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml>  
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110i-RevA.xml>

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

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