



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/GT110b  
(Intel Xeon X3430)

SPECint®2006 = 29.6

SPECint\_base2006 = 27.3

CPU2006 license: 9006

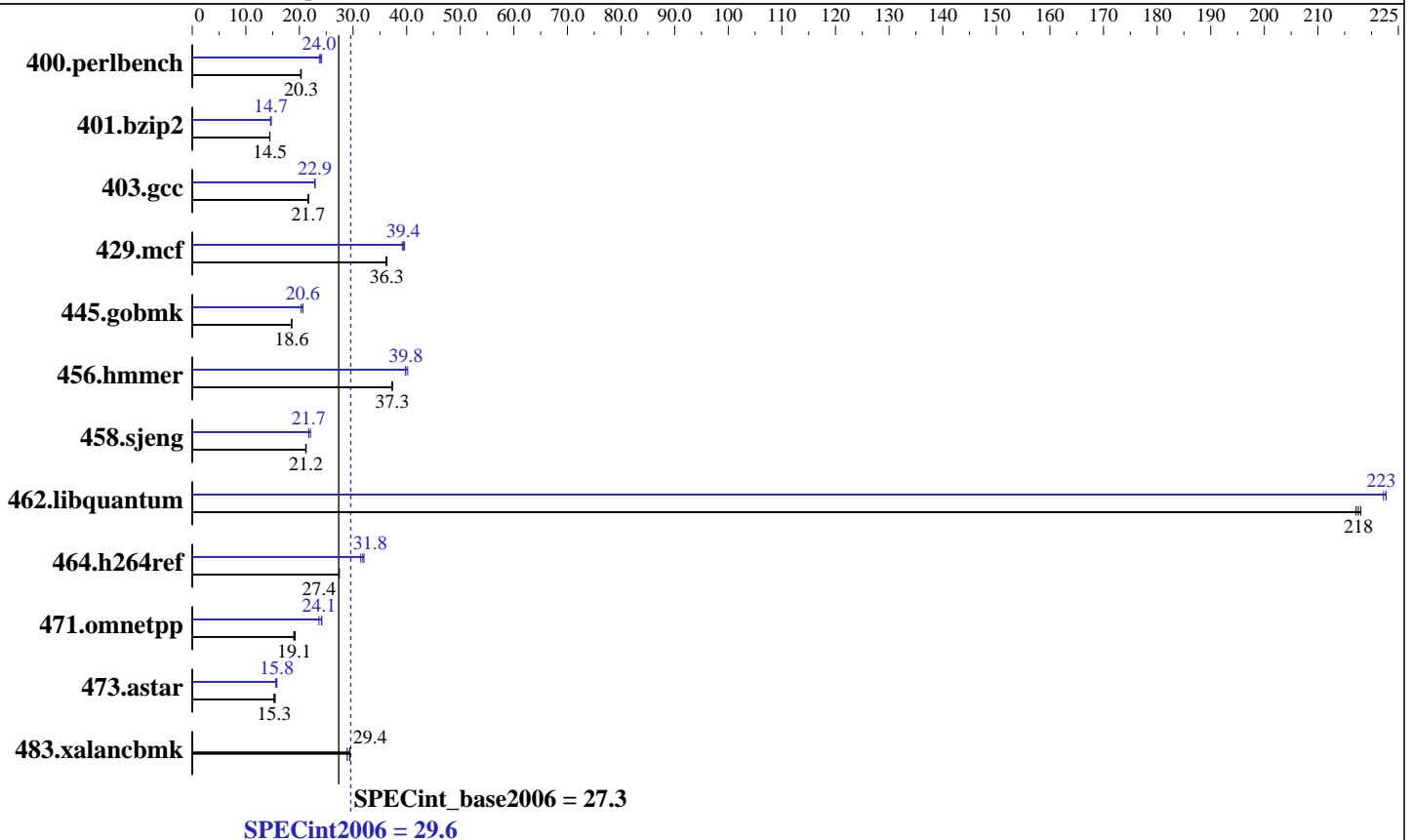
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Feb-2010

Hardware Availability: Apr-2010

Software Availability: Nov-2009



### Hardware

CPU Name: Intel Xeon X3430  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2400  
 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: 8 GB (4 x 2 GB PC3-10600E, 2 rank, CL9, ECC)  
 Disk Subsystem: 1x160 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64), Kernel 2.6.27.19-5-default  
 Compiler: Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091012 Package ID: l\_cproc\_p\_11.1.059  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 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	483	20.2	480	20.3	<b><u>481</u></b>	<b><u>20.3</u></b>	405	24.1	<b><u>407</u></b>	<b><u>24.0</u></b>	412	23.7
401.bzip2	667	14.5	<b><u>667</u></b>	<b><u>14.5</u></b>	666	14.5	661	14.6	655	14.7	<b><u>658</u></b>	<b><u>14.7</u></b>
403.gcc	371	21.7	372	21.7	<b><u>372</u></b>	<b><u>21.7</u></b>	352	22.8	<b><u>352</u></b>	<b><u>22.9</u></b>	351	22.9
429.mcf	252	36.1	251	36.3	<b><u>251</u></b>	<b><u>36.3</u></b>	<b><u>232</u></b>	<b><u>39.4</u></b>	233	39.2	230	39.6
445.gobmk	<b><u>565</u></b>	<b><u>18.6</u></b>	565	18.6	566	18.5	508	20.7	517	20.3	<b><u>509</u></b>	<b><u>20.6</u></b>
456.hammer	250	37.3	<b><u>250</u></b>	<b><u>37.3</u></b>	250	37.3	<b><u>234</u></b>	<b><u>39.8</u></b>	232	40.2	235	39.8
458.sjeng	569	21.2	<b><u>570</u></b>	<b><u>21.2</u></b>	571	21.2	<b><u>556</u></b>	<b><u>21.7</u></b>	548	22.1	557	21.7
462.libquantum	<b><u>95.2</u></b>	<b><u>218</u></b>	95.0	218	95.4	217	<b><u>93.0</u></b>	<b><u>223</u></b>	93.0	223	93.2	222
464.h264ref	806	27.5	808	27.4	<b><u>808</u></b>	<b><u>27.4</u></b>	<b><u>695</u></b>	<b><u>31.8</u></b>	704	31.4	691	32.0
471.omnetpp	325	19.2	330	18.9	<b><u>328</u></b>	<b><u>19.1</u></b>	258	24.2	264	23.6	<b><u>259</u></b>	<b><u>24.1</u></b>
473.astar	453	15.5	460	15.3	<b><u>459</u></b>	<b><u>15.3</u></b>	<b><u>445</u></b>	<b><u>15.8</u></b>	450	15.6	445	15.8
483.xalancbmk	<b><u>235</u></b>	<b><u>29.4</u></b>	239	28.9	234	29.4	<b><u>235</u></b>	<b><u>29.4</u></b>	239	28.9	234	29.4

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

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

## Platform Notes

Default BIOS settings were used.

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter

## Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

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## Base Portability Flags (Continued)

```

401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
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: -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 -static -parallel
-par-runtime-control -opt-prefetch

```

C++ benchmarks:

```

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib64 -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

```

```

429.mcf: icc -m32

```

```

445.gobmk: icc -m32

```

```

464.h264ref: icc -m32

```

C++ benchmarks (except as noted below):

```

icpc -m64

```

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## Peak Compiler Invocation (Continued)

471.omnetpp: icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -ansi-alias -opt-prefetch

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div -static(pass 2) -prof-use(pass 2)  
-auto-ilp32 -opt-prefetch -ansi-alias

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

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2  
-ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -unroll4

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel  
-par-runtime-control -opt-prefetch  
-par-schedule-static=32768 -ansi-alias

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -unroll2 -ansi-alias

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## Peak Optimization Flags (Continued)

C++ benchmarks:

```
471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
             -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
             -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
             -L/opt/SmartHeap_8.1/lib -lsmartheap
```

```
473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
           -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
           -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs
           -L/opt/SmartHeap_8.1/lib64 -lsmartheap64
```

```
483.xalancbmk: basepeak = yes
```

## Peak Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revE.20100302.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revE.20100302.xml>

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

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