



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/110Rh-1  
(Intel Pentium Dual-Core E2160)

SPECint®2006 = 13.2

SPECint\_base2006 = 11.7

CPU2006 license: 9006

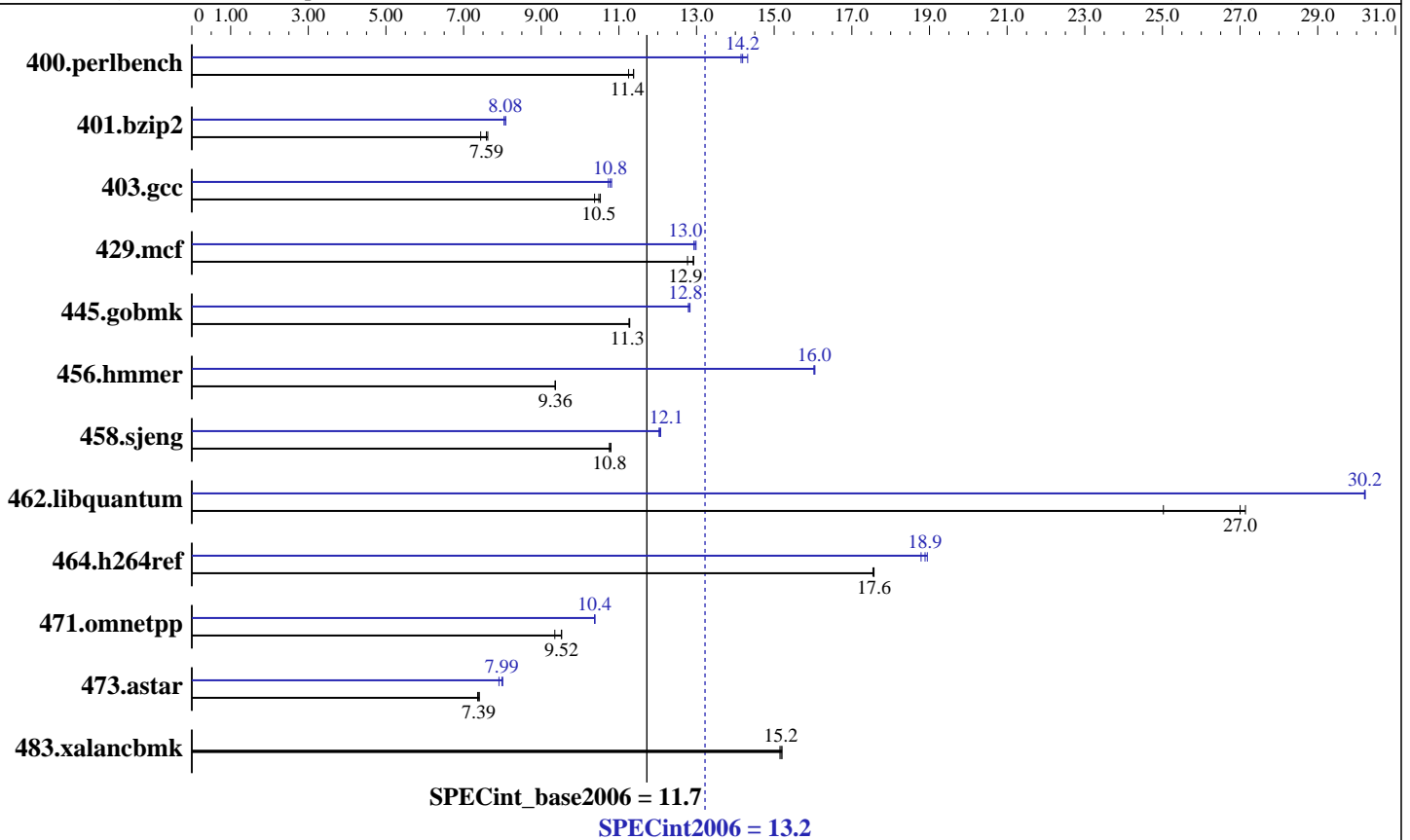
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Feb-2008

Hardware Availability: Aug-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Pentium Dual-Core E2160  
 CPU Characteristics: 1.80 GHz, 1 MB L2, 800 MHz bus  
 CPU MHz: 1800  
 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: 1 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 4 GB (4x1 GB PC2-5300E, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x80 GB SATAII, 7200RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: L\_cc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ext2  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: MicroQuill SmartHeap library 8.1 binutils-2.17.tar.gz, Version 2.17



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>859</b>	<b>11.4</b>	858	11.4	868	11.3	<b>689</b>	<b>14.2</b>	682	14.3	691	14.1
401.bzip2	1297	7.44	<b>1272</b>	<b>7.59</b>	1266	7.62	1200	8.04	<b>1195</b>	<b>8.08</b>	1194	8.08
403.gcc	776	10.4	765	10.5	<b>768</b>	<b>10.5</b>	<b>747</b>	<b>10.8</b>	745	10.8	750	10.7
429.mcf	<b>706</b>	<b>12.9</b>	706	12.9	714	12.8	702	13.0	705	12.9	<b>703</b>	<b>13.0</b>
445.gobmk	<b>931</b>	<b>11.3</b>	932	11.3	930	11.3	<b>819</b>	<b>12.8</b>	820	12.8	817	12.8
456.hmmer	997	9.36	<b>997</b>	<b>9.36</b>	996	9.36	582	16.0	581	16.0	<b>582</b>	<b>16.0</b>
458.sjeng	<b>1124</b>	<b>10.8</b>	1121	10.8	1125	10.8	1006	12.0	1002	12.1	<b>1004</b>	<b>12.1</b>
462.libquantum	828	25.0	<b>767</b>	<b>27.0</b>	763	27.1	686	30.2	<b>686</b>	<b>30.2</b>	686	30.2
464.h264ref	<b>1260</b>	<b>17.6</b>	1259	17.6	1262	17.5	1178	18.8	<b>1172</b>	<b>18.9</b>	1168	18.9
471.omnetpp	668	9.35	<b>657</b>	<b>9.52</b>	656	9.53	602	10.4	602	10.4	<b>602</b>	<b>10.4</b>
473.astar	954	7.36	<b>950</b>	<b>7.39</b>	948	7.41	887	7.91	<b>879</b>	<b>7.99</b>	877	8.01
483.xalancbmk	455	15.1	<b>455</b>	<b>15.2</b>	454	15.2	455	15.1	<b>455</b>	<b>15.2</b>	454	15.2

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  
OMP\_NUM\_THREADS set to number of cores

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,  
for peak, are compiled in 64-bit mode

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX



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## Base Optimization Flags

C benchmarks:

`-fast -vec-guard-write -parallel -par-runtime-control`

C++ benchmarks:

`-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/opt/SmartHeap_8.1/lib -lsmartheap`

## Base Other Flags

C benchmarks:

`403.gcc: -Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):

`icc`

`401.bzip2: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include`

`456.hmmer: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include`

C++ benchmarks:

`icpc`

## Peak Portability Flags

`400.perlbench: -DSPEC_CPU_LINUX_IA32  
401.bzip2: -DSPEC_CPU_LP64  
456.hmmer: -DSPEC_CPU_LP64  
462.libquantum: -DSPEC_CPU_LINUX  
483.xalancbmk: -DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

Continued on next page



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## Peak Optimization Flags (Continued)

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias  
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive  
-auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch  
-opt-streaming-stores always -vec-guard-write  
-opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec-div -ansi-alias -opt-ra-region-strategy=block  
-Wl,-z,muldefs -L/opt/SmartHeap\_8.1/lib -lsmarheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine  
-Wl,-z,muldefs -L/opt/SmartHeap\_8.1/lib -lsmarheap

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/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090714.00.html>



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

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090714.00.xml>

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

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