



# SPEC® CINT2006 Result

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## NEC Corporation

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

**SPECint\_rate2006 = 21.2**

**SPECint\_rate\_base2006 = 18.8**

CPU2006 license: 9006

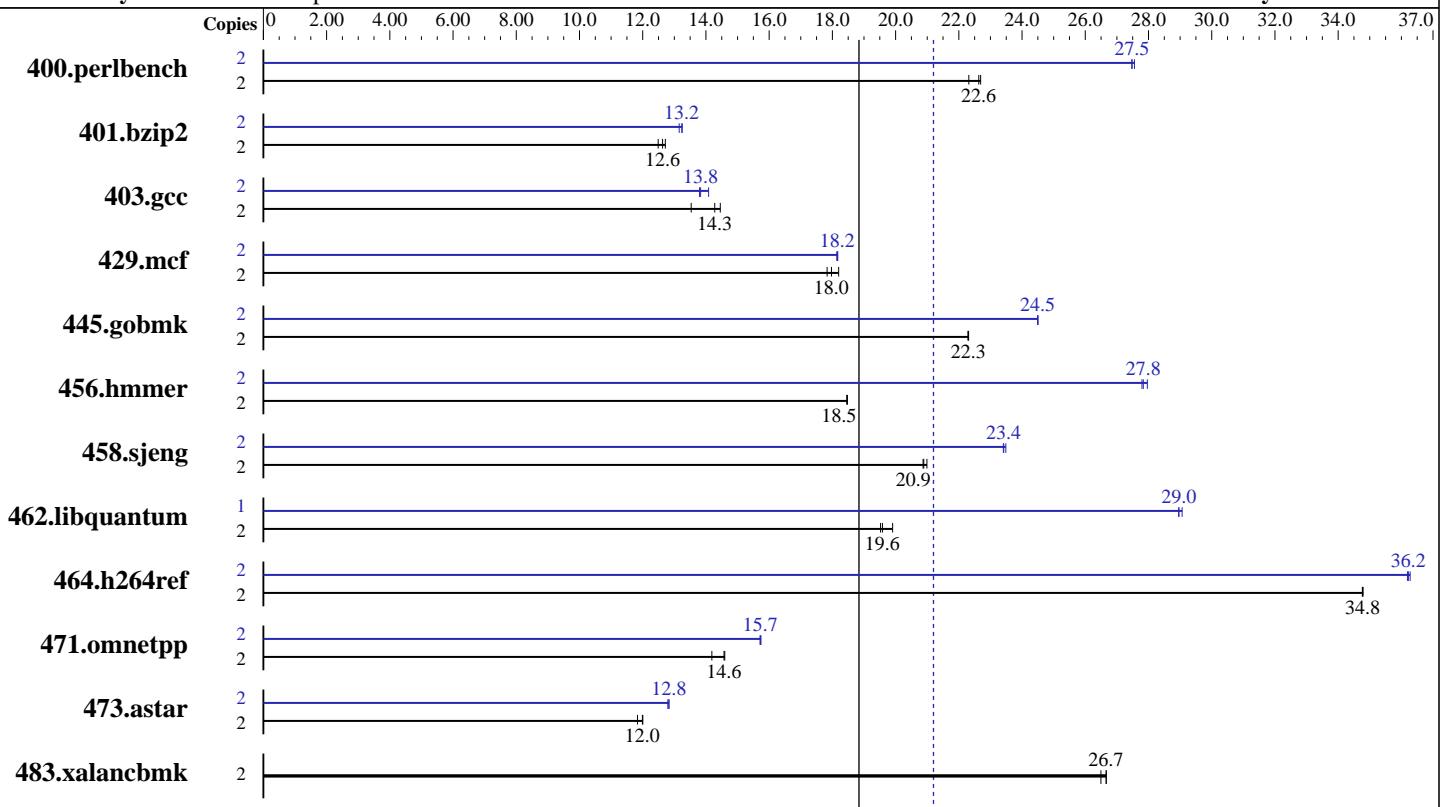
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Feb-2008

Hardware Availability: Aug-2007

Software Availability: Nov-2007



**SPECint\_rate\_base2006 = 18.8**

**SPECint\_rate2006 = 21.2**

### 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	2	861	22.7	<b>863</b>	<b>22.6</b>	876	22.3	2	711	27.5	709	27.6	<b>711</b>	<b>27.5</b>
401.bzip2	2	1545	12.5	<b>1528</b>	<b>12.6</b>	1518	12.7	2	<b>1458</b>	<b>13.2</b>	1457	13.2	<b>1467</b>	<b>13.2</b>
403.gcc	2	1190	13.5	1114	14.5	<b>1128</b>	<b>14.3</b>	2	1167	13.8	<b>1164</b>	<b>13.8</b>	1143	14.1
429.mcf	2	<b>1015</b>	<b>18.0</b>	1023	17.8	1002	18.2	2	1004	18.2	<b>1004</b>	<b>18.2</b>	1006	18.1
445.gobmk	2	940	22.3	941	22.3	<b>941</b>	<b>22.3</b>	2	857	24.5	<b>857</b>	<b>24.5</b>	856	24.5
456.hammer	2	1011	18.5	1010	18.5	<b>1010</b>	<b>18.5</b>	2	<b>670</b>	<b>27.8</b>	667	28.0	671	27.8
458.sjeng	2	1153	21.0	<b>1158</b>	<b>20.9</b>	1160	20.9	2	1030	23.5	1034	23.4	<b>1033</b>	<b>23.4</b>
462.libquantum	2	<b>2116</b>	<b>19.6</b>	2123	19.5	2082	19.9	1	<b>715</b>	<b>29.0</b>	716	29.0	<b>713</b>	<b>29.1</b>
464.h264ref	2	<b>1273</b>	<b>34.8</b>	1273	34.8	1272	34.8	2	1220	36.3	<b>1222</b>	<b>36.2</b>	1223	36.2
471.omnetpp	2	881	14.2	<b>858</b>	<b>14.6</b>	856	14.6	2	795	15.7	<b>795</b>	<b>15.7</b>	794	15.7
473.astar	2	1186	11.8	<b>1171</b>	<b>12.0</b>	1170	12.0	2	1097	12.8	1094	12.8	<b>1094</b>	<b>12.8</b>
483.xalancbmk	2	521	26.5	<b>518</b>	<b>26.7</b>	518	26.7	2	521	26.5	<b>518</b>	<b>26.7</b>	518	26.7

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,  
456.hammer, 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 -inline-calloc -opt-malloc-options=3
```

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

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 -unroll12 -ansi-alias -opt-multi-version-aggressive

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

462.libquantum: -fast -unroll14 -O0 -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 -unroll12  
-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 -lsmartheap

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 -lsmartheap

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>

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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