



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/R110a-1  
(Intel Xeon E3110)

SPECint®\_rate2006 = 47.1

SPECint\_rate\_base2006 = 43.7

CPU2006 license: 9006

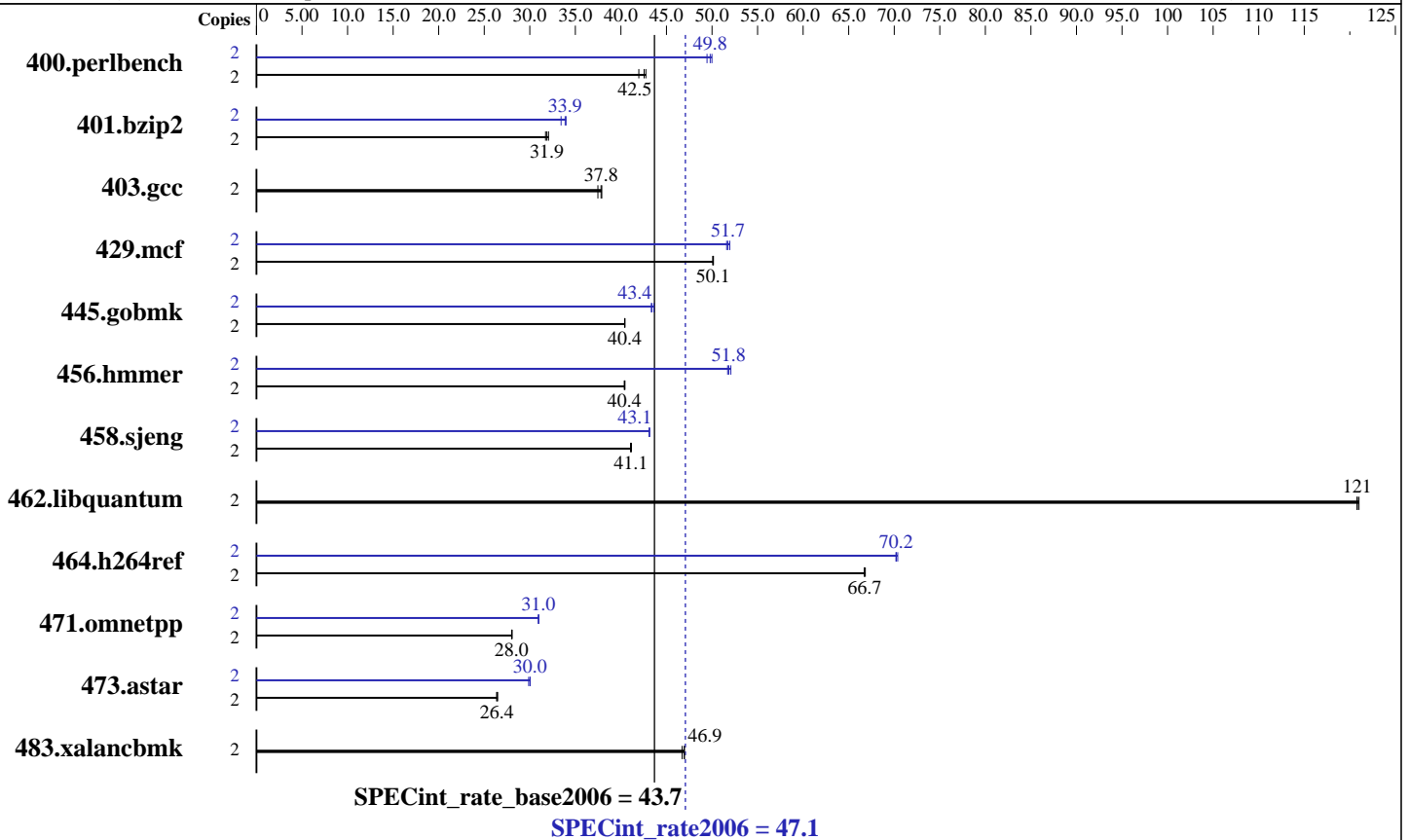
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Sep-2009

Hardware Availability: May-2009

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon E3110  
 CPU Characteristics: 1333 MHz bus  
 CPU MHz: 3000  
 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: 6 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (4x2 GB PC2-6400E, 2 rank, CL6-6-6, ECC)  
 Disk Subsystem: 1x160 GB SATA2, 7200 RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ Compiler Professional 11.0 for Linux Build 20080930 Package ID: l\_cproc\_p\_11.0.069  
 Auto Parallel: No  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: MicroQuill SmartHeap Library 8.1 Binutils 2.18.50.0.7.20080502



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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	457	42.7	<b>459</b>	<b>42.5</b>	466	42.0	2	395	49.5	<b>392</b>	<b>49.8</b>	391	50.0
401.bzip2	2	<b>606</b>	<b>31.9</b>	608	31.7	602	32.1	2	577	33.4	568	34.0	<b>570</b>	<b>33.9</b>
403.gcc	2	430	37.5	425	37.9	<b>426</b>	<b>37.8</b>	2	430	37.5	425	37.9	<b>426</b>	<b>37.8</b>
429.mcf	2	364	50.2	<b>364</b>	<b>50.1</b>	364	50.1	2	351	52.0	353	51.6	<b>352</b>	<b>51.7</b>
445.gobmk	2	519	40.4	519	40.4	<b>519</b>	<b>40.4</b>	2	484	43.3	481	43.6	<b>484</b>	<b>43.4</b>
456.hammer	2	462	40.4	461	40.4	<b>462</b>	<b>40.4</b>	2	361	51.7	358	52.1	<b>360</b>	<b>51.8</b>
458.sjeng	2	588	41.2	<b>589</b>	<b>41.1</b>	589	41.1	2	561	43.2	<b>561</b>	<b>43.1</b>	561	43.1
462.libquantum	2	342	121	<b>343</b>	<b>121</b>	343	121	2	342	121	<b>343</b>	<b>121</b>	343	121
464.h264ref	2	664	66.7	662	66.8	<b>663</b>	<b>66.7</b>	2	631	70.2	<b>630</b>	<b>70.2</b>	629	70.4
471.omnetpp	2	445	28.1	446	28.0	<b>446</b>	<b>28.0</b>	2	404	31.0	404	31.0	<b>404</b>	<b>31.0</b>
473.astar	2	<b>532</b>	<b>26.4</b>	530	26.5	532	26.4	2	470	29.9	468	30.0	<b>468</b>	<b>30.0</b>
483.xalancbmk	2	294	47.0	<b>294</b>	<b>46.9</b>	295	46.7	2	294	47.0	<b>294</b>	<b>46.9</b>	295	46.7

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.  
taskset was used to bind processes to cores

## Operating System Notes

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

## Platform Notes

Bios settings:  
Hardware Prefetcher: Enabled  
Adjacent Cache Line Prefetch: Disabled

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc



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## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -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/Compiler/11.0/069/bin/intel64/icc  
-L/opt/intel/Compiler/11.0/069/ipp/em64t/lib  
-I/opt/intel/Compiler/11.0/069/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/069/bin/intel64/icc  
-L/opt/intel/Compiler/11.0/069/ipp/em64t/lib  
-I/opt/intel/Compiler/11.0/069/ipp/em64t/include

C++ benchmarks:

icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

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

401.bzp2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-prefetch -ansi-alias

403.gcc: basepeak = yes

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-prefetch

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

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias

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

462.libquantum: basepeak = yes

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

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-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) -xSSE4.1 -ipo -O3  
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine  
-Wl,-z,muldefs -L/opt/SmartHeap\_8.1/lib -lsmartheap

483.xalancbmk: basepeak = yes



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## 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-ic11.0-int-linux64-revG.html>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revG.xml>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.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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