



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/iR110a-1  
(Intel Xeon L3110)

SPECint®2006 = 27.4

SPECint\_base2006 = 24.4

CPU2006 license: 9006

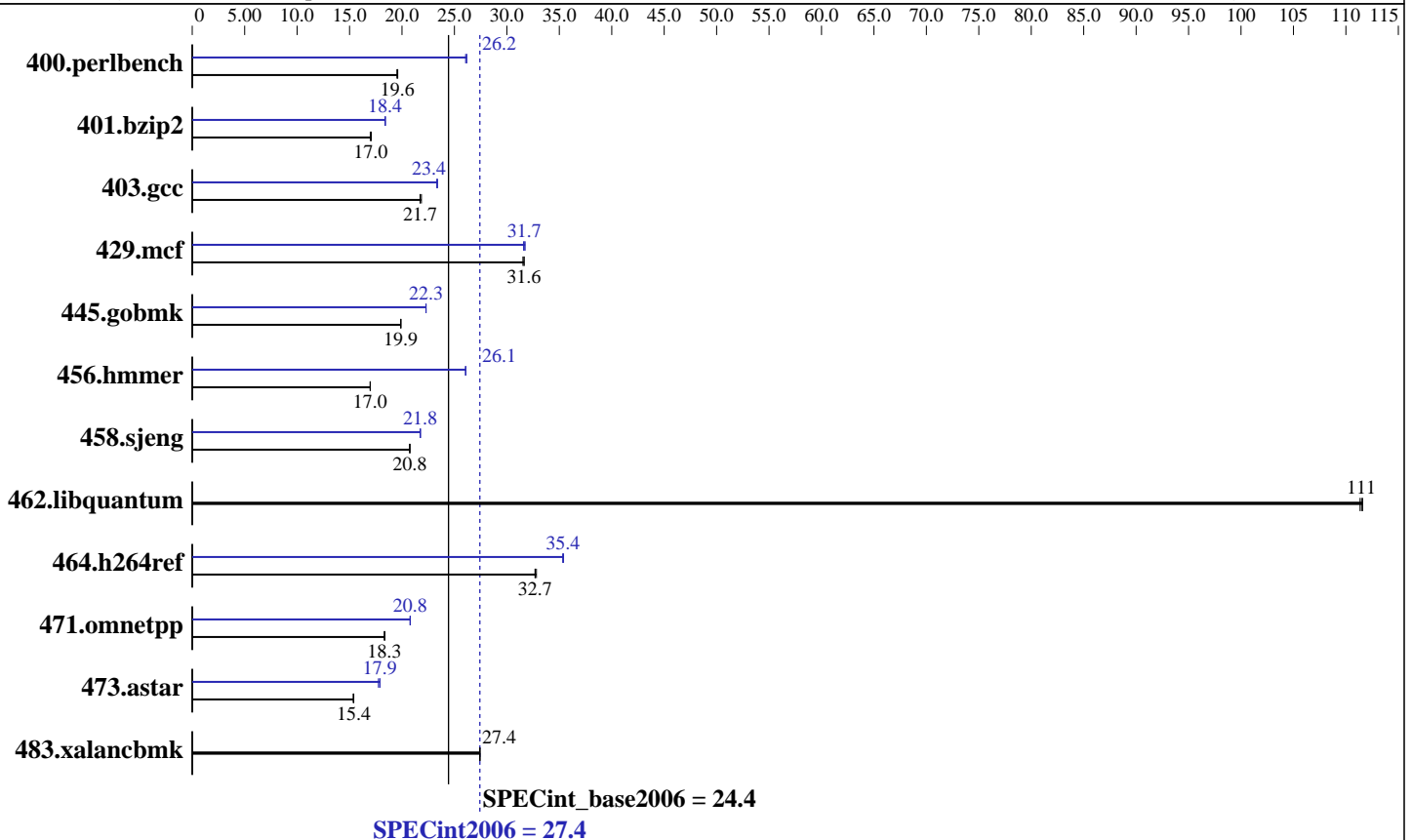
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2009

Hardware Availability: May-2009

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon L3110  
 CPU Characteristics: 1333 MHz system 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: Yes  
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>499</b>	<b>19.6</b>	499	19.6	501	19.5	375	26.1	<b>373</b>	<b>26.2</b>	373	26.2
401.bzip2	<b>566</b>	<b>17.0</b>	565	17.1	568	17.0	524	18.4	525	18.4	<b>524</b>	<b>18.4</b>
403.gcc	368	21.9	371	21.7	<b>370</b>	<b>21.7</b>	344	23.4	345	23.3	<b>345</b>	<b>23.4</b>
429.mcf	289	31.5	288	31.6	<b>288</b>	<b>31.6</b>	<b>288</b>	<b>31.7</b>	287	31.7	289	31.6
445.gobmk	527	19.9	<b>527</b>	<b>19.9</b>	528	19.9	471	22.3	471	22.3	<b>471</b>	<b>22.3</b>
456.hammer	<b>550</b>	<b>17.0</b>	550	17.0	550	17.0	358	26.1	358	26.1	<b>358</b>	<b>26.1</b>
458.sjeng	<b>583</b>	<b>20.8</b>	584	20.7	583	20.8	<b>556</b>	<b>21.8</b>	556	21.8	556	21.7
462.libquantum	186	111	<b>186</b>	<b>111</b>	186	112	186	111	<b>186</b>	<b>111</b>	186	112
464.h264ref	674	32.8	<b>677</b>	<b>32.7</b>	677	32.7	625	35.4	<b>626</b>	<b>35.4</b>	626	35.3
471.omnetpp	340	18.4	<b>341</b>	<b>18.3</b>	341	18.3	<b>301</b>	<b>20.8</b>	301	20.8	301	20.8
473.astar	458	15.3	<b>456</b>	<b>15.4</b>	456	15.4	392	17.9	<b>393</b>	<b>17.9</b>	395	17.7
483.xalancbmk	251	27.5	<b>252</b>	<b>27.4</b>	252	27.4	251	27.5	<b>252</b>	<b>27.4</b>	252	27.4

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  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to "physical,0"

## 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

## Base Optimization Flags

C benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel  
-par-runtime-control -opt-prefetch

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/opt/SmartHeap\_8.1/lib -lsmarheap

## 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  
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

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## Peak Optimization Flags (Continued)

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

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-alloc  
-opt-malloc-options=3

429.mcf: -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.hmmr: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias -auto-ilp32

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 -lsmarheap

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 -lsmarheap

483.xalancbmk: basepeak = yes

## 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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<http://www.spec.org/>

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

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