



# SPEC<sup>®</sup> CINT2006 Result

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## NEC Corporation

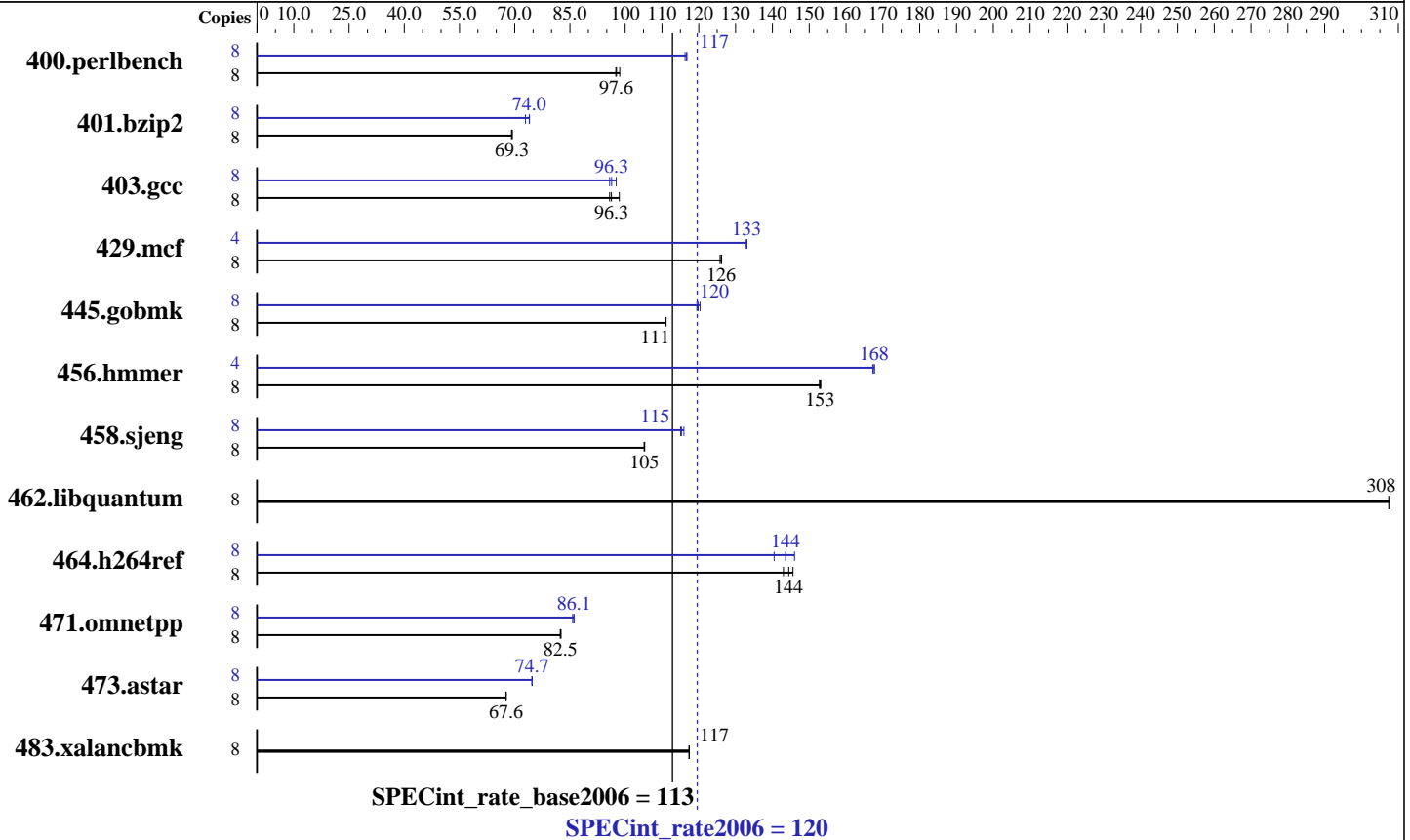
Express5800/T110b  
(Intel Xeon X3460)

SPECint<sup>®</sup>\_rate2006 = 120

SPECint\_rate\_base2006 = 113

CPU2006 license: 9006  
Test sponsor: NEC Corporation  
Tested by: NEC Corporation

Test date: Feb-2010  
Hardware Availability: Jan-2010  
Software Availability: Nov-2009



### Hardware

CPU Name: Intel Xeon X3460  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 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: 16 GB (4 x 4 GB PC3-10600R, 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: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V8.1



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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	8	<b>800</b>	<b>97.6</b>	793	98.5	802	97.5	8	<b>670</b>	<b>117</b>	670	117	672	116
401.bzip2	8	1113	69.3	<b>1115</b>	<b>69.3</b>	1117	69.1	8	1043	74.0	<b>1044</b>	<b>74.0</b>	1059	72.9
403.gcc	8	654	98.4	<b>669</b>	<b>96.3</b>	672	95.8	8	672	95.8	<b>669</b>	<b>96.3</b>	660	97.6
429.mcf	8	<b>579</b>	<b>126</b>	580	126	578	126	4	274	133	274	133	<b>274</b>	<b>133</b>
445.gobmk	8	<b>756</b>	<b>111</b>	757	111	755	111	8	697	120	702	119	<b>700</b>	<b>120</b>
456.hammer	8	489	153	<b>488</b>	<b>153</b>	487	153	4	223	167	<b>223</b>	<b>168</b>	223	168
458.sjeng	8	919	105	921	105	<b>920</b>	<b>105</b>	8	835	116	<b>840</b>	<b>115</b>	841	115
462.libquantum	8	<b>539</b>	<b>308</b>	539	308	539	307	8	<b>539</b>	<b>308</b>	539	308	539	307
464.h264ref	8	1216	146	<b>1226</b>	<b>144</b>	1238	143	8	<b>1233</b>	<b>144</b>	1213	146	1260	140
471.omnetpp	8	605	82.6	<b>606</b>	<b>82.5</b>	607	82.4	8	<b>581</b>	<b>86.1</b>	581	86.1	583	85.7
473.astar	8	829	67.7	<b>830</b>	<b>67.6</b>	831	67.6	8	751	74.8	752	74.7	<b>752</b>	<b>74.7</b>
483.xalancbmk	8	<b>470</b>	<b>117</b>	470	117	470	117	8	<b>470</b>	<b>117</b>	470	117	470	117

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.  
numactl was used to bind copies to the cores

## Operating System Notes

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

## Platform Notes

Default BIOS settings were used.

## Base Compiler Invocation

C benchmarks:  
icc -m32

C++ benchmarks:  
icpc -m32

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32

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## Base Portability Flags (Continued)

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

## Base Optimization Flags

C benchmarks:

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

C++ benchmarks:

-xSSE4.2 -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 -m32

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX

Continued on next page



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## Peak Portability Flags (Continued)

473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -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

401.bzip2: -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) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static

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.hmmr: -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 -auto-ilp32

462.libquantum: basepeak = yes

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

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 -lsmarheap

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 -lsmarheap64

Continued on next page



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## Peak Optimization Flags (Continued)

483.xalanbmk: 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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