



# SPEC<sup>®</sup> CINT2006 Result

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## NEC Corporation

T120Rc-1  
(Intel Xeon X5460)

SPECint<sup>®</sup>\_rate2006 = 134

SPECint\_rate\_base2006 = 108

CPU2006 license: 9006

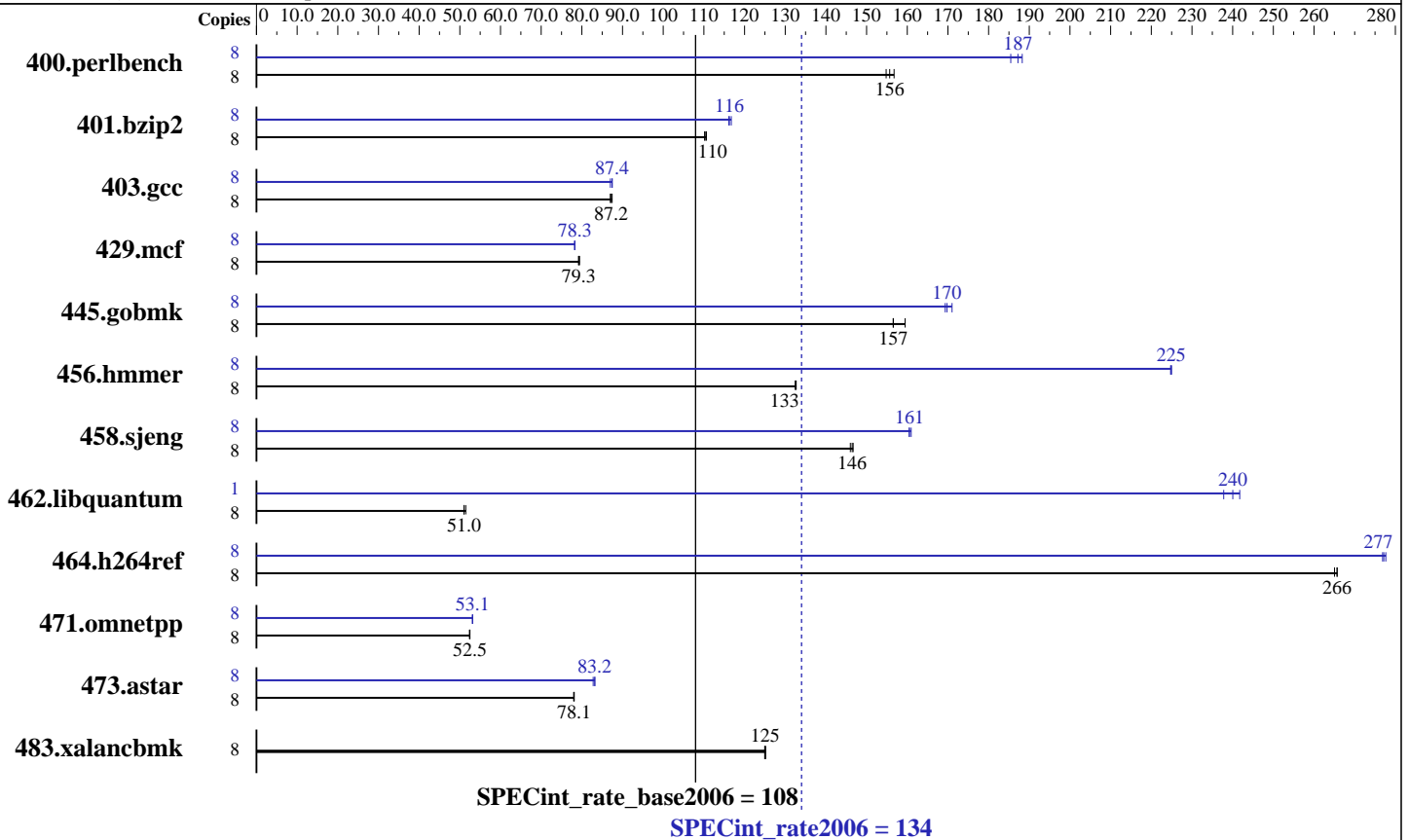
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Feb-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5460  
 CPU Characteristics: 3.16 GHz, 2x6 MB L2 shared, 1333 MHz bus  
 CPU MHz: 3167  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x250 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	8	499	157	505	155	<b><u>502</u></b>	<b><u>156</u></b>	8	421	185	415	188	<b><u>417</u></b>	<b><u>187</u></b>
401.bzip2	8	701	110	698	111	<b><u>700</u></b>	<b><u>110</u></b>	8	<b><u>664</u></b>	<b><u>116</u></b>	661	117	665	116
403.gcc	8	740	87.0	<b><u>738</u></b>	<b><u>87.2</u></b>	736	87.4	8	736	87.5	740	87.0	<b><u>737</u></b>	<b><u>87.4</u></b>
429.mcf	8	918	79.4	<b><u>921</u></b>	<b><u>79.3</u></b>	922	79.2	8	933	78.2	<b><u>932</u></b>	<b><u>78.3</u></b>	932	78.3
445.gobmk	8	526	159	<b><u>536</u></b>	<b><u>157</u></b>	536	157	8	491	171	496	169	<b><u>494</u></b>	<b><u>170</u></b>
456.hammer	8	<b><u>563</u></b>	<b><u>133</u></b>	563	132	562	133	8	<b><u>332</u></b>	<b><u>225</u></b>	332	225	332	225
458.sjeng	8	663	146	660	147	<b><u>661</u></b>	<b><u>146</u></b>	8	603	160	601	161	<b><u>603</u></b>	<b><u>161</u></b>
462.libquantum	8	3249	51.0	<b><u>3247</u></b>	<b><u>51.0</u></b>	3221	51.5	1	87.1	238	85.7	242	<b><u>86.3</u></b>	<b><u>240</u></b>
464.h264ref	8	668	265	<b><u>666</u></b>	<b><u>266</u></b>	666	266	8	639	277	<b><u>639</u></b>	<b><u>277</u></b>	638	278
471.omnetpp	8	955	52.4	<b><u>953</u></b>	<b><u>52.5</u></b>	953	52.5	8	941	53.1	<b><u>941</u></b>	<b><u>53.1</u></b>	941	53.1
473.astar	8	719	78.1	720	78.0	<b><u>719</u></b>	<b><u>78.1</u></b>	8	675	83.2	<b><u>675</u></b>	<b><u>83.2</u></b>	678	82.8
483.xalancbmk	8	441	125	<b><u>441</u></b>	<b><u>125</u></b>	442	125	8	441	125	<b><u>441</u></b>	<b><u>125</u></b>	442	125

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

## Platform Notes

Bios settings:  
Intel SpeedStep Technology: Disabled

## 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



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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:  
-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

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## Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

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 -unroll2 -ansi-alias -opt-multi-version-aggressive

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:

Continued on next page



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## Peak Other Flags (Continued)

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.20090713.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.20090713.xml>

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

Tested with SPEC CPU2006 v1.0.  
Report generated on Tue Jul 22 15:33:47 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 19 March 2008.