



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/120Rj-2  
(Intel Xeon processor X5450)

SPECint®2006 = 26.3

SPECint\_base2006 = 23.0

CPU2006 license: 9006

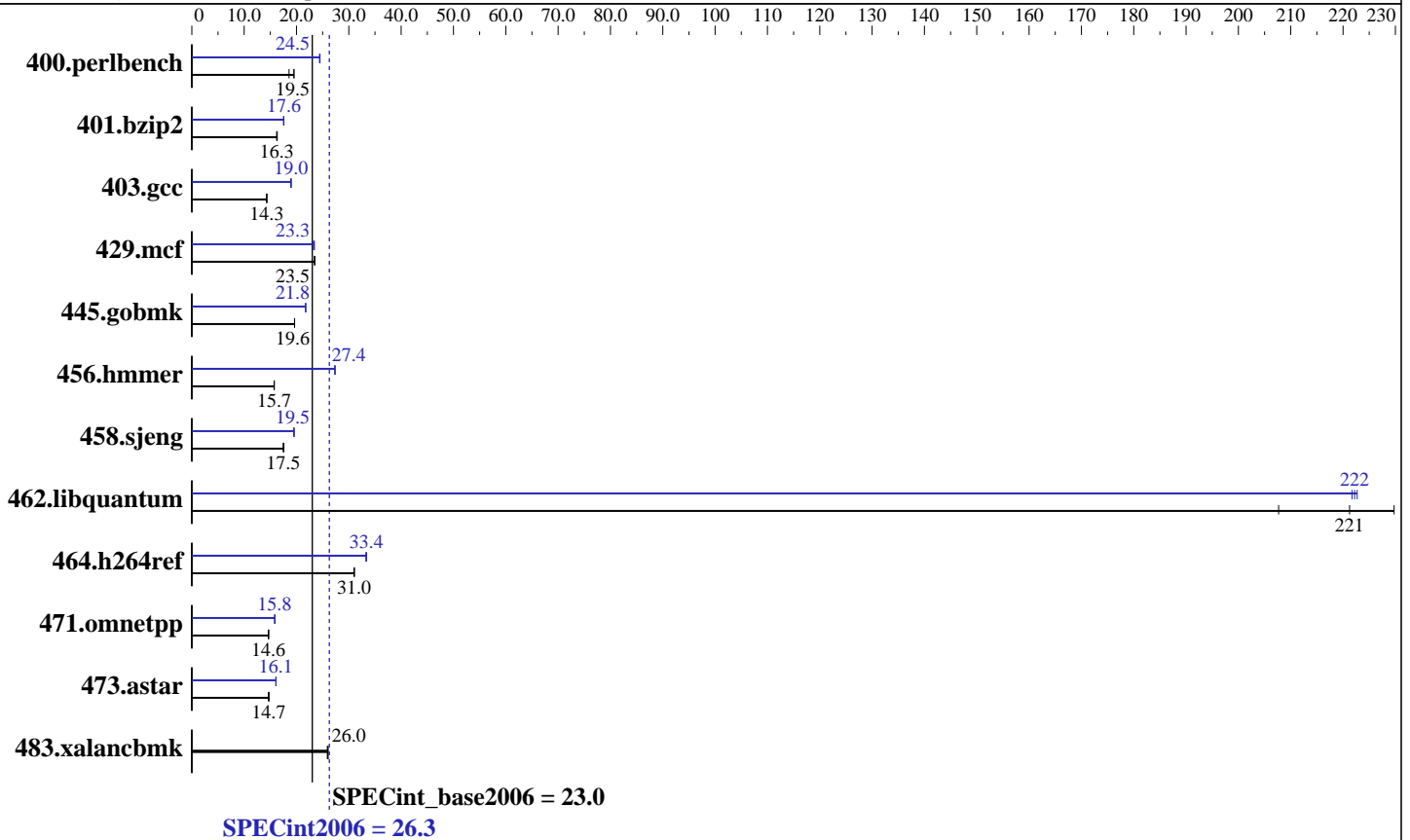
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Dec-2007

Hardware Availability: Dec-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5450  
 CPU Characteristics: 3.00 GHz, 2x6 MB L2 shared, 1333 MHz bus  
 CPU MHz: 3000  
 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: 1x73.2 GB SAS, 15000RPM  
 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: Multiuser, Runlevel 3  
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	526	18.6	500	19.5	<b><u>501</u></b>	<b><u>19.5</u></b>	<b><u>399</u></b>	<b><u>24.5</u></b>	399	24.5	400	24.4
401.bzip2	591	16.3	<b><u>593</u></b>	<b><u>16.3</u></b>	595	16.2	<b><u>549</u></b>	<b><u>17.6</u></b>	551	17.5	549	17.6
403.gcc	<b><u>562</u></b>	<b><u>14.3</u></b>	563	14.3	561	14.3	424	19.0	425	18.9	<b><u>425</u></b>	<b><u>19.0</u></b>
429.mcf	<b><u>389</u></b>	<b><u>23.5</u></b>	387	23.5	389	23.4	389	23.4	<b><u>391</u></b>	<b><u>23.3</u></b>	392	23.2
445.gobmk	<b><u>534</u></b>	<b><u>19.6</u></b>	535	19.6	534	19.6	<b><u>482</u></b>	<b><u>21.8</u></b>	482	21.7	482	21.8
456.hmmer	<b><u>593</u></b>	<b><u>15.7</u></b>	592	15.7	593	15.7	<b><u>341</u></b>	<b><u>27.4</u></b>	341	27.3	341	27.4
458.sjeng	688	17.6	<b><u>691</u></b>	<b><u>17.5</u></b>	693	17.5	<b><u>620</u></b>	<b><u>19.5</u></b>	621	19.5	618	19.6
462.libquantum	<b><u>93.7</u></b>	<b><u>221</u></b>	90.2	230	99.8	208	93.0	223	93.5	222	<b><u>93.2</u></b>	<b><u>222</u></b>
464.h264ref	714	31.0	<b><u>713</u></b>	<b><u>31.0</u></b>	712	31.1	662	33.4	665	33.3	<b><u>663</u></b>	<b><u>33.4</u></b>
471.omnetpp	427	14.6	425	14.7	<b><u>427</u></b>	<b><u>14.6</u></b>	393	15.9	395	15.8	<b><u>395</u></b>	<b><u>15.8</u></b>
473.astar	479	14.6	<b><u>478</u></b>	<b><u>14.7</u></b>	475	14.8	<b><u>437</u></b>	<b><u>16.1</u></b>	436	16.1	437	16.1
483.xalancbmk	267	25.9	<b><u>265</u></b>	<b><u>26.0</u></b>	265	26.0	267	25.9	<b><u>265</u></b>	<b><u>26.0</u></b>	265	26.0

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 (default).

## Platform Notes

Bios settings:  
Intel SpeedStep Technology: Disabled

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer, for peak, are compiled in 64-bit mode

The NEC Express5800/120Rh-1(Intel Xeon Processor X5450), the NEC Express5800/120Rj-2(Intel Xeon Processor X5450), the Bull NovaScale R440 E1 (Intel Xeon X5450,3.00GHz) and the Bull NovaScale R460 E1 (Intel Xeon X5450,3.00GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon Processor X5450) model.

## Base Compiler Invocation

C benchmarks:  
icc

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## Base Compiler Invocation (Continued)

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:  
-fast -vec-guard-write -parallel -par-runtime-control

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



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## 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) -fast -ansi-alias  
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

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  
-auto-ilp32

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 -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



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## 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-ia32-intel64-linux-flags.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-ia32-intel64-linux-flags.xml>

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

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