



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/B120a-d  
(Intel Xeon E5502)

SPECint®\_rate2006 = 36.1

SPECint\_rate\_base2006 = 33.6

CPU2006 license: 9006

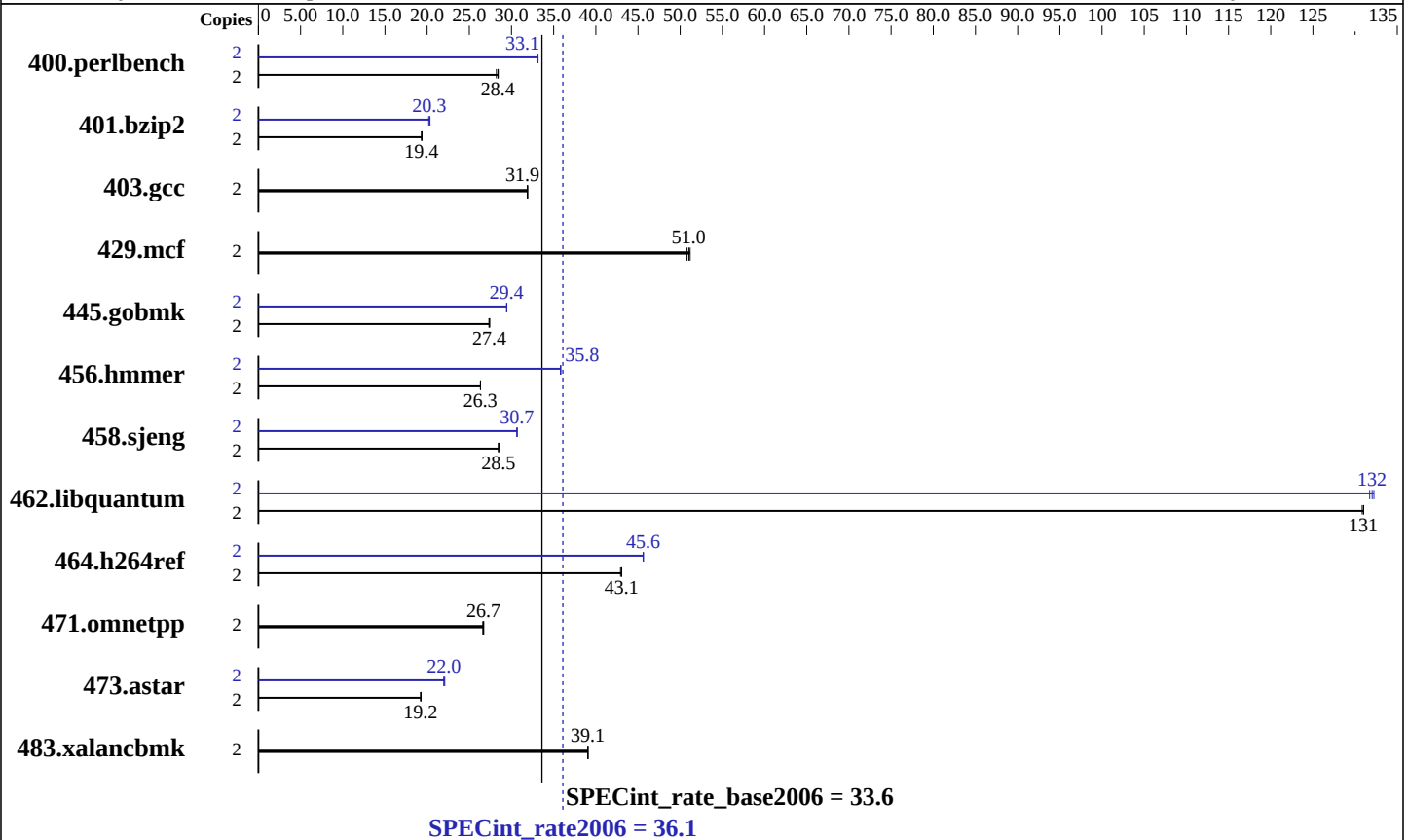
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Aug-2009

Hardware Availability: Jun-2009

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon E5502  
CPU Characteristics: 1867  
CPU MHz: 1867  
FPU: Integrated  
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
CPU(s) orderable: 1,2 chips  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 256 KB I+D on chip per core  
L3 Cache: 4 MB I+D on chip per chip  
Other Cache: None  
Memory: 24 GB (6 X 4 GB PC3-8500R running at 800 MHz)  
Disk Subsystem: 1x73.2 GB SAS, 10000 RPM  
Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64)  
SP2 with patch Linux kernel 20090119,  
Kernel 2.6.16.60-0.34-smp  
Compiler: Intel C++ Compiler Professional 11.0 for Linux  
Build 20090131 Package ID: l\_cproc\_p\_11.0.081  
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      | 693        | 28.2        | <b>688</b>  | <b>28.4</b> | 687        | 28.4        | 2      | 589        | 33.2        | <b>590</b> | <b>33.1</b> | 591     | 33.1  |
| 401.bzip2      | 2      | <b>997</b> | <b>19.4</b> | 995         | 19.4        | 999        | 19.3        | 2      | <b>951</b> | <b>20.3</b> | 956        | 20.2        | 949     | 20.3  |
| 403.gcc        | 2      | 504        | 31.9        | <b>505</b>  | <b>31.9</b> | 505        | 31.9        | 2      | 504        | 31.9        | <b>505</b> | <b>31.9</b> | 505     | 31.9  |
| 429.mcf        | 2      | <b>357</b> | <b>51.0</b> | 356         | 51.2        | 359        | 50.8        | 2      | <b>357</b> | <b>51.0</b> | 356        | 51.2        | 359     | 50.8  |
| 445.gobmk      | 2      | <b>766</b> | <b>27.4</b> | 768         | 27.3        | 766        | 27.4        | 2      | 712        | 29.5        | <b>713</b> | <b>29.4</b> | 713     | 29.4  |
| 456.hammer     | 2      | <b>709</b> | <b>26.3</b> | 709         | 26.3        | 709        | 26.3        | 2      | 521        | 35.8        | <b>521</b> | <b>35.8</b> | 521     | 35.8  |
| 458.sjeng      | 2      | 849        | 28.5        | <b>850</b>  | <b>28.5</b> | 850        | 28.5        | 2      | 789        | 30.7        | <b>789</b> | <b>30.7</b> | 790     | 30.6  |
| 462.libquantum | 2      | 316        | 131         | 317         | 131         | <b>316</b> | <b>131</b>  | 2      | 315        | 132         | <b>314</b> | <b>132</b>  | 313     | 132   |
| 464.h264ref    | 2      | 1028       | 43.1        | <b>1028</b> | <b>43.1</b> | 1031       | 42.9        | 2      | 970        | 45.6        | <b>970</b> | <b>45.6</b> | 971     | 45.6  |
| 471.omnetpp    | 2      | 468        | 26.7        | <b>469</b>  | <b>26.7</b> | 470        | 26.6        | 2      | 468        | 26.7        | <b>469</b> | <b>26.7</b> | 470     | 26.6  |
| 473.astar      | 2      | 728        | 19.3        | 730         | 19.2        | <b>730</b> | <b>19.2</b> | 2      | <b>638</b> | <b>22.0</b> | 639        | 22.0        | 636     | 22.1  |
| 483.xalancbmk  | 2      | 353        | 39.1        | <b>353</b>  | <b>39.1</b> | 353        | 39.1        | 2      | 353        | 39.1        | <b>353</b> | <b>39.1</b> | 353     | 39.1  |

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

C++ benchmarks:  
icpc

## 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 -inline-calloc  
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -w1, -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/11.0/081/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/081/bin/intel64/icc

458.sjeng: /opt/intel/Compiler/11.0/081/bin/intel64/icc

C++ benchmarks (except as noted below):

icpc

473.astar: /opt/intel/Compiler/11.0/081/bin/intel64/icpc

## Peak Portability Flags

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

401.bzip2: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

462.libquantum: -DSPEC\_CPU\_LINUX  
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 -opt-prefetch

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: basepeak = yes

429.mcf: basepeak = yes

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

456.hmmer: -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: -xSSE4.2 -ipo -O3 -no-prec-div -static  
-opt-malloc-options=3 -opt-prefetch

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: basepeak = yes

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 -auto-ilp32  
-Wl,-z,muldefs -L/opt/SmartHeap\_8.1/lib64 -lsmartheap64

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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