



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/120Gd  
(Intel Xeon E5405)

SPECint®\_rate2006 = 52.2

SPECint\_rate\_base2006 = 44.6

CPU2006 license: 9006

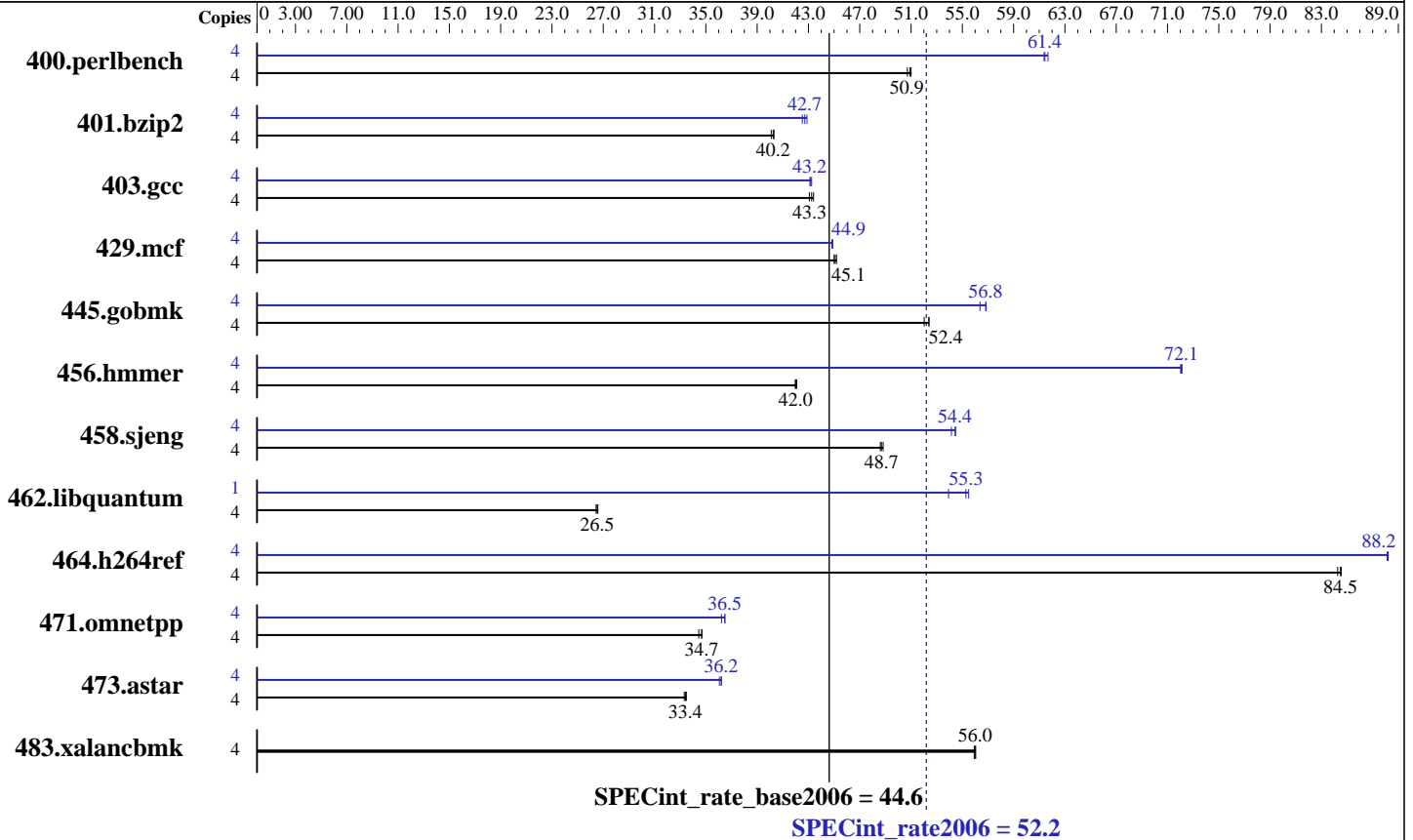
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: May-2008

Hardware Availability: Apr-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5405  
 CPU Characteristics: 2.00 GHz, 2x6 MB L2 shared, 1333 MHz bus  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 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: 8 GB (8x1 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  | 4      | <b><u>767</u></b> | <b><u>50.9</u></b> | 766               | 51.0               | 771                | 50.7               | 4      | 634               | 61.7               | 637               | 61.4               | <b><u>636</u></b>  | <b><u>61.4</u></b> |
| 401.bzip2      | 4      | <b><u>959</u></b> | <b><u>40.2</u></b> | 957               | 40.3               | 963                | 40.1               | 4      | 908               | 42.5               | 900               | 42.9               | <b><u>904</u></b>  | <b><u>42.7</u></b> |
| 403.gcc        | 4      | 748               | 43.1               | <b><u>744</u></b> | <b><u>43.3</u></b> | 742                | 43.4               | 4      | 747               | 43.1               | 745               | 43.3               | <b><u>746</u></b>  | <b><u>43.2</u></b> |
| 429.mcf        | 4      | <b><u>809</u></b> | <b><u>45.1</u></b> | 811               | 45.0               | 807                | 45.2               | 4      | <b><u>813</u></b> | <b><u>44.9</u></b> | 813               | 44.9               | 813                | 44.8               |
| 445.gobmk      | 4      | 807               | 52.0               | <b><u>801</u></b> | <b><u>52.4</u></b> | 801                | 52.4               | 4      | <b><u>739</u></b> | <b><u>56.8</u></b> | 738               | 56.9               | 744                | 56.4               |
| 456.hmmer      | 4      | 887               | 42.1               | 889               | 42.0               | <b><u>889</u></b>  | <b><u>42.0</u></b> | 4      | <b><u>518</u></b> | <b><u>72.1</u></b> | 518               | 72.0               | 517                | 72.1               |
| 458.sjeng      | 4      | 991               | 48.8               | <b><u>994</u></b> | <b><u>48.7</u></b> | 996                | 48.6               | 4      | <b><u>889</u></b> | <b><u>54.4</u></b> | 888               | 54.5               | 894                | 54.1               |
| 462.libquantum | 4      | 3118              | 26.6               | 3134              | 26.4               | <b><u>3125</u></b> | <b><u>26.5</u></b> | 1      | 384               | 53.9               | <b><u>375</u></b> | <b><u>55.3</u></b> | 373                | 55.5               |
| 464.h264ref    | 4      | 1050              | 84.3               | 1047              | 84.5               | <b><u>1048</u></b> | <b><u>84.5</u></b> | 4      | 1005              | 88.1               | 1004              | 88.2               | <b><u>1004</u></b> | <b><u>88.2</u></b> |
| 471.omnetpp    | 4      | 721               | 34.7               | 726               | 34.4               | <b><u>721</u></b>  | <b><u>34.7</u></b> | 4      | 690               | 36.2               | <b><u>685</u></b> | <b><u>36.5</u></b> | 685                | 36.5               |
| 473.astar      | 4      | 839               | 33.5               | 843               | 33.3               | <b><u>841</u></b>  | <b><u>33.4</u></b> | 4      | 775               | 36.2               | <b><u>776</u></b> | <b><u>36.2</u></b> | 779                | 36.1               |
| 483.xalancbmk  | 4      | 492               | 56.0               | <b><u>493</u></b> | <b><u>56.0</u></b> | 494                | 55.9               | 4      | 492               | 56.0               | <b><u>493</u></b> | <b><u>56.0</u></b> | 494                | 55.9               |

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:  
Hardware Prefetcher: Disabled  
Adjacent Cache Line Prefetch: Disabled  
Intel SpeedStep Technology: Disabled

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2,  
456.hmmer, 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.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.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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