



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

Express5800/120Gd  
(Intel Xeon E5205)

SPECfp<sup>®</sup>\_rate2006 = 36.5

SPECfp\_rate\_base2006 = 33.3

CPU2006 license: 9006

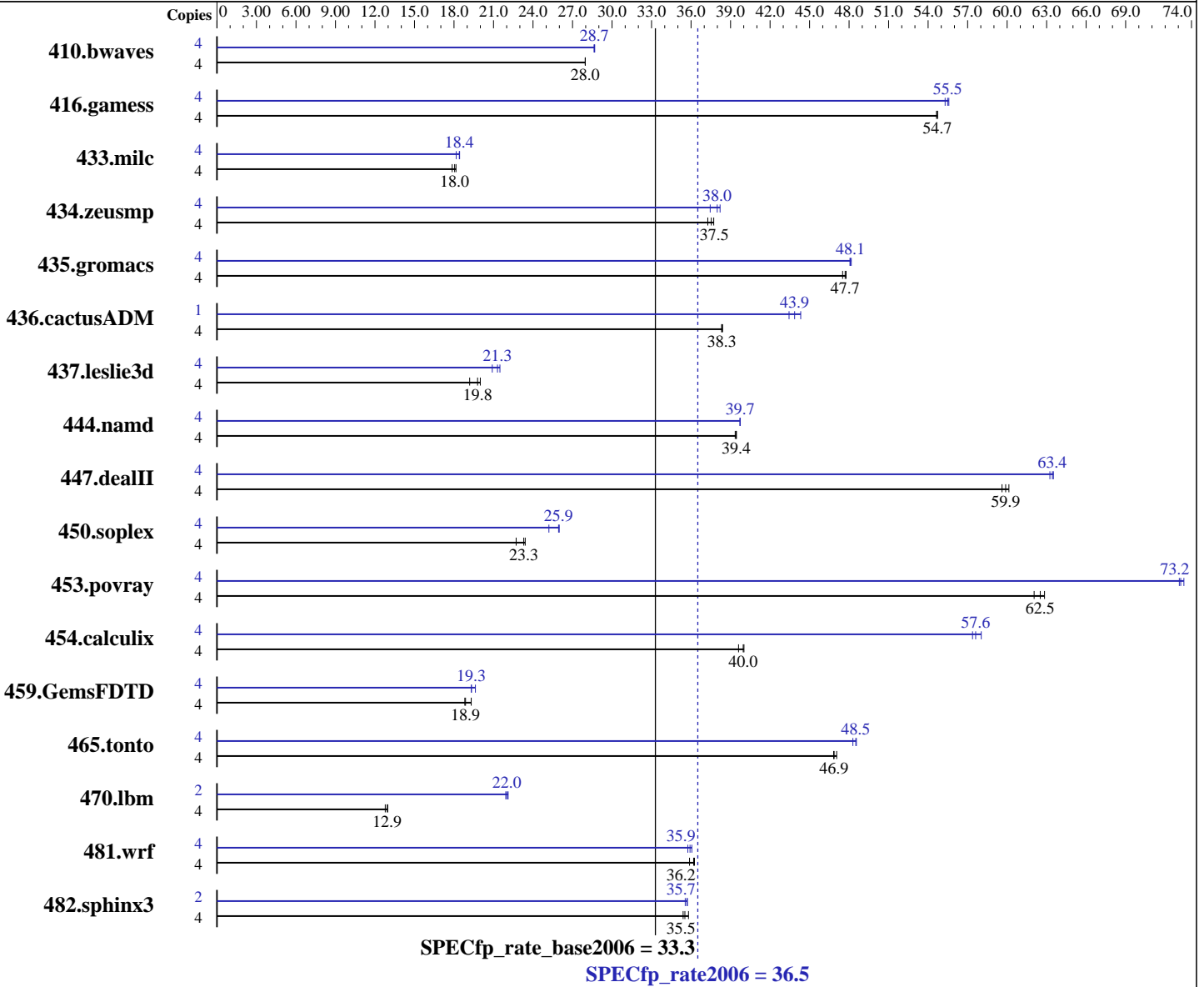
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: May-2008

Hardware Availability: Apr-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5205  
 CPU Characteristics: 1.86 GHz, 6 MB L2, 1066 MHz bus  
 CPU MHz: 1867  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip

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### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1,  
Kernel 2.6.16.46-0.12-smpp  
 Compiler: Intel C++ and Fortran Compiler for Linux32 and  
Linux64  
version 10.1 Build 20070913 Package ID:  
l\_cc\_p\_10.1.008,  
l\_fc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ext2

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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

System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: binutils-2.17.tar.gz, Version 2.17

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1944	28.0	<u>1944</u>	<u>28.0</u>	1944	28.0	4	<u>1897</u>	<u>28.7</u>	1898	28.6	1895	28.7
416.gamess	4	1433	54.6	1431	54.7	<u>1432</u>	<u>54.7</u>	4	<u>1412</u>	<u>55.5</u>	1417	55.3	1409	55.6
433.milc	4	2056	17.9	2023	18.2	<u>2035</u>	<u>18.0</u>	4	2021	18.2	<u>1995</u>	<u>18.4</u>	1993	18.4
434.zeusmp	4	977	37.3	<u>970</u>	<u>37.5</u>	965	37.7	4	972	37.5	953	38.2	<u>958</u>	<u>38.0</u>
435.gromacs	4	<u>599</u>	<u>47.7</u>	601	47.5	598	47.8	4	593	48.2	594	48.1	<u>594</u>	<u>48.1</u>
436.cactusADM	4	<u>1247</u>	<u>38.3</u>	1247	38.3	1245	38.4	1	275	43.4	270	44.3	<u>272</u>	<u>43.9</u>
437.leslie3d	4	1959	19.2	1880	20.0	<u>1900</u>	<u>19.8</u>	4	1799	20.9	1750	21.5	<u>1765</u>	<u>21.3</u>
444.namd	4	<u>814</u>	<u>39.4</u>	815	39.4	813	39.4	4	808	39.7	807	39.7	<u>808</u>	<u>39.7</u>
447.dealII	4	761	60.1	<u>764</u>	<u>59.9</u>	768	59.6	4	720	63.5	<u>721</u>	<u>63.4</u>	723	63.2
450.soplex	4	1468	22.7	1425	23.4	<u>1432</u>	<u>23.3</u>	4	1323	25.2	<u>1286</u>	<u>25.9</u>	1283	26.0
453.povray	4	339	62.8	<u>340</u>	<u>62.5</u>	343	62.1	4	291	73.1	290	73.4	<u>291</u>	<u>73.2</u>
454.calculix	4	833	39.6	<u>826</u>	<u>40.0</u>	825	40.0	4	<u>573</u>	<u>57.6</u>	569	58.0	575	57.4
459.GemsFDTD	4	2198	19.3	<u>2248</u>	<u>18.9</u>	2255	18.8	4	2163	19.6	<u>2197</u>	<u>19.3</u>	2197	19.3
465.tonto	4	836	47.1	<u>840</u>	<u>46.9</u>	841	46.8	4	<u>811</u>	<u>48.5</u>	811	48.6	815	48.3
470.lbm	4	4301	12.8	4240	13.0	<u>4250</u>	<u>12.9</u>	2	1243	22.1	<u>1248</u>	<u>22.0</u>	1253	21.9
481.wrf	4	1245	35.9	<u>1234</u>	<u>36.2</u>	1232	36.3	4	1250	35.8	1239	36.1	<u>1244</u>	<u>35.9</u>
482.sphinx3	4	2202	35.4	<u>2194</u>	<u>35.5</u>	2177	35.8	2	1091	35.7	1096	35.6	<u>1092</u>	<u>35.7</u>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Compiler Invocation Notes

OMP\_NUM\_THREADS set to number of cores

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
'/usr/bin/taskset' used to bind processes to CPUs

## Platform Notes

Bios settings:  
Hardware Prefetcher: Enabled  
Adjacent Cache Line Prefetch: Enabled  
Intel SpeedStep Technology: Disabled



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**Test date:** May-2008

**Hardware Availability:** Apr-2008

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## General Notes

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3, for peak, are compiled in 32-bit mode

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
416.gamess: -DSPEC\_CPU\_LP64  
433.milc: -DSPEC\_CPU\_LP64  
434.zeusmp: -DSPEC\_CPU\_LP64  
435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main  
436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
437.leslie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.dealII: -DSPEC\_CPU\_LP64  
450.soplex: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64  
465.tonto: -DSPEC\_CPU\_LP64  
470.lbm: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX  
482.sphinx3: -DSPEC\_CPU\_LP64

## Base Optimization Flags

C benchmarks:

-fast

C++ benchmarks:

-fast

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## Base Optimization Flags (Continued)

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

## Peak Compiler Invocation

C benchmarks (except as noted below):

/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib  
-I/opt/intel/fc/10.1.008/include

Benchmarks using both Fortran and C:

icc ifort

## Peak Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
416.gamess: -DSPEC\_CPU\_LP64  
433.milc: -DSPEC\_CPU\_LP64  
434.zeusmp: -DSPEC\_CPU\_LP64  
435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main  
436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
444.namd: -DSPEC\_CPU\_LP64  
447.dealII: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64  
465.tonto: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX



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## Peak Optimization Flags

### C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast  
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4  
-ansi-alias

### Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-prefetch -parallel -auto-ilp32

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## Peak Optimization Flags (Continued)

454.calculix: -fast -unroll-aggressive -auto-ilp32  
481.wrf: -fast -auto-ilp32

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090714.html>

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

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090714.xml>

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