



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

Express5800/120Bb-m6  
(Intel Xeon X5260)

SPECfp<sup>®</sup>\_rate2006 = 28.0

SPECfp\_rate\_base2006 = 25.9

CPU2006 license: 9006

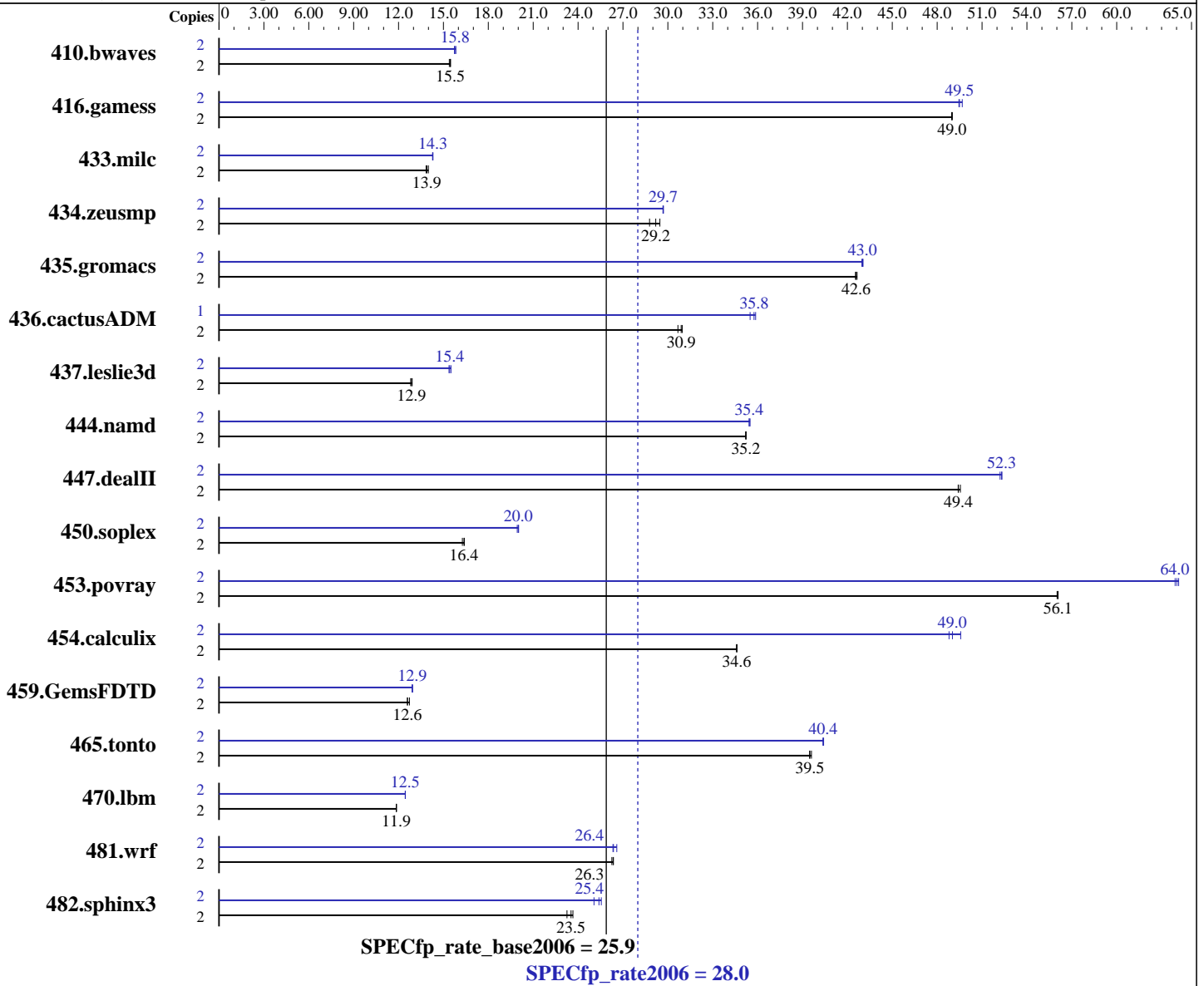
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: May-2008

Hardware Availability: Feb-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5260  
 CPU Characteristics: 3.33 GHz, 6 MB L2, 1333 MHz bus  
 CPU MHz: 3333  
 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: 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: ReiserFS

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L3 Cache: None  
Other Cache: None  
Memory: 8 GB (4x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1x73.2 GB SAS, 15000RPM  
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	2	1766	15.4	1756	15.5	<b>1758</b>	<b>15.5</b>	2	1717	15.8	1728	15.7	<b>1723</b>	<b>15.8</b>
416.gamess	2	<b>799</b>	<b>49.0</b>	800	49.0	799	49.0	2	788	49.7	792	49.5	<b>791</b>	<b>49.5</b>
433.milc	2	1327	13.8	1312	14.0	<b>1321</b>	<b>13.9</b>	2	<b>1285</b>	<b>14.3</b>	1284	14.3	1286	14.3
434.zeusmp	2	<b>623</b>	<b>29.2</b>	618	29.5	632	28.8	2	<b>613</b>	<b>29.7</b>	613	29.7	613	29.7
435.gromacs	2	336	42.5	<b>335</b>	<b>42.6</b>	335	42.6	2	<b>332</b>	<b>43.0</b>	332	43.0	332	43.0
436.cactusADM	2	772	31.0	779	30.7	<b>774</b>	<b>30.9</b>	1	333	35.9	<b>334</b>	<b>35.8</b>	337	35.5
437.leslie3d	2	<b>1461</b>	<b>12.9</b>	1467	12.8	1456	12.9	2	1213	15.5	1223	15.4	<b>1219</b>	<b>15.4</b>
444.namd	2	455	35.2	<b>455</b>	<b>35.2</b>	456	35.2	2	453	35.4	452	35.5	<b>453</b>	<b>35.4</b>
447.dealII	2	462	49.6	463	49.4	<b>463</b>	<b>49.4</b>	2	438	52.2	<b>437</b>	<b>52.3</b>	437	52.3
450.soplex	2	1025	16.3	1017	16.4	<b>1019</b>	<b>16.4</b>	2	837	19.9	<b>834</b>	<b>20.0</b>	833	20.0
453.povray	2	190	56.1	190	56.0	<b>190</b>	<b>56.1</b>	2	167	63.9	<b>166</b>	<b>64.0</b>	166	64.1
454.calculix	2	477	34.6	<b>477</b>	<b>34.6</b>	477	34.6	2	333	49.6	<b>337</b>	<b>49.0</b>	338	48.8
459.GemsFDTD	2	1686	12.6	<b>1684</b>	<b>12.6</b>	1667	12.7	2	<b>1642</b>	<b>12.9</b>	1645	12.9	1640	12.9
465.tonto	2	499	39.5	497	39.6	<b>498</b>	<b>39.5</b>	2	487	40.4	487	40.4	<b>487</b>	<b>40.4</b>
470.lbm	2	<b>2318</b>	<b>11.9</b>	2318	11.9	2318	11.9	2	2207	12.4	<b>2207</b>	<b>12.5</b>	2206	12.5
481.wrf	2	851	26.3	<b>848</b>	<b>26.3</b>	847	26.4	2	<b>847</b>	<b>26.4</b>	848	26.3	840	26.6
482.sphinx3	2	1676	23.3	<b>1657</b>	<b>23.5</b>	1648	23.7	2	1525	25.6	<b>1535</b>	<b>25.4</b>	1555	25.1

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  
'/usr/bin/taskset' used to bind processes to CPUs  
except for 436.cactusADM at peak.  
OMP\_NUM\_THREADS set to number of cores

## 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



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**Test date:** May-2008

**Hardware Availability:** Feb-2008

**Software Availability:** Nov-2007

## 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

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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## 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.deallI: -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
```

## 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
```

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## Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

### C++ benchmarks:

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

447.dealIII: -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

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.html>



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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.xml>

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Tested with SPEC CPU2006 v1.0.  
Report generated on Tue Jul 22 17:40:10 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 25 June 2008.