



# SPEC® CFP2006 Result

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## NEC Corporation

T120Rb-1  
(Intel Xeon processor 5160)

SPECfp®\_rate2006 = 44.3

SPECfp\_rate\_base2006 = 42.9

CPU2006 license: 9006

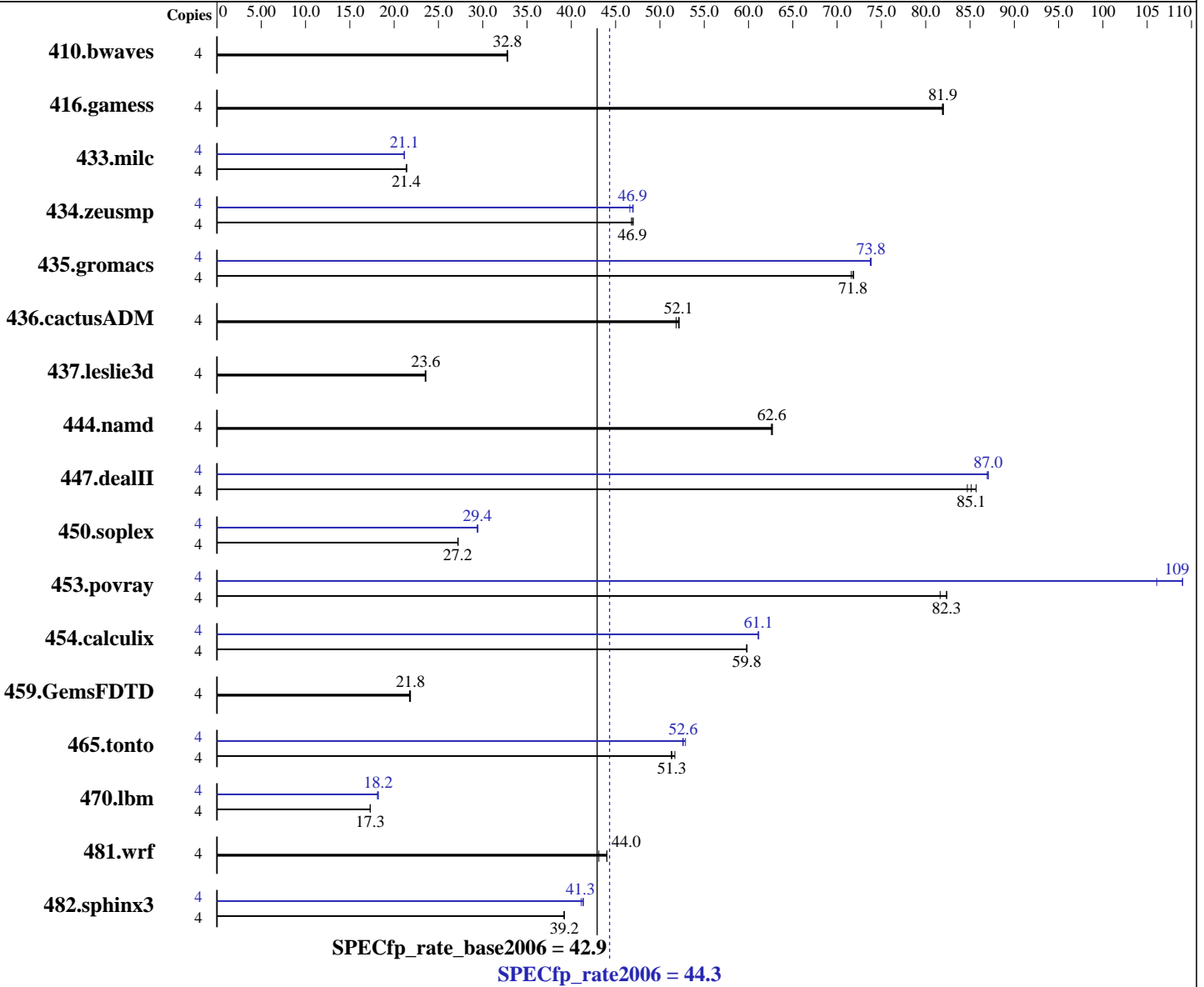
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2007

Hardware Availability: Jun-2007

Software Availability: Apr-2007



### Hardware

CPU Name: Intel Xeon 5160  
 CPU Characteristics: 3.00 GHz, 4MB L2, 1333MHz bus  
 CPU MHz: 3000  
 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: 4 MB I+D on chip per chip

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### Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp on an x86\_64  
 Compiler: Intel C++ Compiler for IA32/EM64T application, Version 9.1 - Build 20070320, Package-ID: l\_cc\_c\_9.1.049  
 Intel Fortran Compiler for IA32/EM64T application, Version 9.1 - Build 20070320, Package ID: l\_fc\_c\_9.1.045  
 Auto Parallel: No  
 File System: ext2

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L3 Cache: None  
Other Cache: None  
Memory: 8 GB (4x2 GB DDR2 5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1x80 GB SATA II, 7200RPM  
Other Hardware: None

System State: Multiuser, Runlevel 3  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	<b><u>1658</u></b>	<b><u>32.8</u></b>	1656	32.8	1661	32.7	4	<b><u>1658</u></b>	<b><u>32.8</u></b>	1656	32.8	1661	32.7
416.gamess	4	955	82.0	<b><u>956</u></b>	<b><u>81.9</u></b>	957	81.9	4	955	82.0	<b><u>956</u></b>	<b><u>81.9</u></b>	957	81.9
433.milc	4	1719	21.4	<b><u>1718</u></b>	<b><u>21.4</u></b>	1714	21.4	4	1736	21.1	<b><u>1737</u></b>	<b><u>21.1</u></b>	1737	21.1
434.zeusmp	4	778	46.8	<b><u>776</u></b>	<b><u>46.9</u></b>	775	47.0	4	<b><u>776</u></b>	<b><u>46.9</u></b>	781	46.6	775	47.0
435.gromacs	4	399	71.6	397	71.9	<b><u>398</u></b>	<b><u>71.8</u></b>	4	387	73.9	387	73.7	<b><u>387</u></b>	<b><u>73.8</u></b>
436.cactusADM	4	916	52.2	<b><u>918</u></b>	<b><u>52.1</u></b>	922	51.8	4	916	52.2	<b><u>918</u></b>	<b><u>52.1</u></b>	922	51.8
437.leslie3d	4	1595	23.6	<b><u>1596</u></b>	<b><u>23.6</u></b>	1600	23.5	4	1595	23.6	<b><u>1596</u></b>	<b><u>23.6</u></b>	1600	23.5
444.namd	4	<b><u>512</u></b>	<b><u>62.6</u></b>	513	62.6	512	62.7	4	<b><u>512</u></b>	<b><u>62.6</u></b>	513	62.6	512	62.7
447.dealII	4	534	85.7	540	84.7	<b><u>537</u></b>	<b><u>85.1</u></b>	4	<b><u>526</u></b>	<b><u>87.0</u></b>	526	86.9	526	87.1
450.soplex	4	1227	27.2	<b><u>1227</u></b>	<b><u>27.2</u></b>	1225	27.2	4	<b><u>1135</u></b>	<b><u>29.4</u></b>	1135	29.4	1132	29.5
453.povray	4	258	82.4	261	81.6	<b><u>258</u></b>	<b><u>82.3</u></b>	4	<b><u>195</u></b>	<b><u>109</u></b>	195	109	201	106
454.calculix	4	<b><u>552</u></b>	<b><u>59.8</u></b>	551	59.8	552	59.8	4	<b><u>540</u></b>	<b><u>61.1</u></b>	540	61.1	540	61.2
459.GemsFDTD	4	1943	21.8	<b><u>1943</u></b>	<b><u>21.8</u></b>	1953	21.7	4	1943	21.8	<b><u>1943</u></b>	<b><u>21.8</u></b>	1953	21.7
465.tonto	4	761	51.7	767	51.3	<b><u>767</u></b>	<b><u>51.3</u></b>	4	749	52.6	744	52.9	<b><u>748</u></b>	<b><u>52.6</u></b>
470.lbm	4	3177	17.3	3176	17.3	<b><u>3176</u></b>	<b><u>17.3</u></b>	4	3034	18.1	<b><u>3020</u></b>	<b><u>18.2</u></b>	3019	18.2
481.wrf	4	1036	43.1	1015	44.0	<b><u>1015</u></b>	<b><u>44.0</u></b>	4	1036	43.1	1015	44.0	<b><u>1015</u></b>	<b><u>44.0</u></b>
482.sphinx3	4	<b><u>1989</u></b>	<b><u>39.2</u></b>	1989	39.2	1989	39.2	4	1885	41.4	<b><u>1887</u></b>	<b><u>41.3</u></b>	1896	41.1

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

## General Notes

The system bus runs at 1333 MHz  
All binaries were built with 64-bit Intel compiler except:  
433.milc, 434.zeusmp, 450.soplex, 470.lbm and 482.sphinx3 in peak were built with  
32-bit Intel compiler by changing the path for include and library files.



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**Test date:** Jul-2007

**Hardware Availability:** Jun-2007

**Software Availability:** Apr-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:

```
/opt/intel/cc/9.1.049/bin/icc -I/opt/intel/cc/9.1.049/include  
-L/opt/intel/cc/9.1.049/lib
```

### C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/9.1.049/bin/icpc  
-I/opt/intel/cc/9.1.049/include -L/opt/intel/cc/9.1.049/lib
```

### Fortran benchmarks (except as noted below):

ifort

```
434.zeusmp: /opt/intel/fc/9.1.045/bin/ifort  
-I/opt/intel/fc/9.1.045/include -L/opt/intel/fc/9.1.045/lib
```

### Benchmarks using both Fortran and C:

icc ifort

## Peak Portability Flags

```
410.bwaves: -DSPEC_CPU_LP64  
416.gamess: -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.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
```

```
470.lbm: Same as 433.milc
```

```
482.sphinx3: -fast
```

### C++ benchmarks:

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## Peak Optimization Flags (Continued)

444.namd: basepeak = yes

447.dealII: -prof\_gen(pass 1) -prof\_use(pass 2) -fast

450.soplex: Same as 447.dealII

453.povray: Same as 447.dealII

### Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: basepeak = yes

434.zeusmp: -fast

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -prof\_gen(pass 1) -prof\_use(pass 2) -fast

### Benchmarks using both Fortran and C:

435.gromacs: -prof\_gen(pass 1) -prof\_use(pass 2) -fast

436.cactusADM: basepeak = yes

454.calculix: Same as 435.gromacs

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/NEC-ic91-linux-flags.html>

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

<http://www.spec.org/cpu2006/flags/NEC-ic91-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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