



# SPEC® CFP2006 Result

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## NEC Corporation

Express5800/i120Rg-1  
(Intel Xeon processor 5110)

SPECfp®\_rate2006 = 29.9

SPECfp\_rate\_base2006 = 29.0

CPU2006 license: 9006

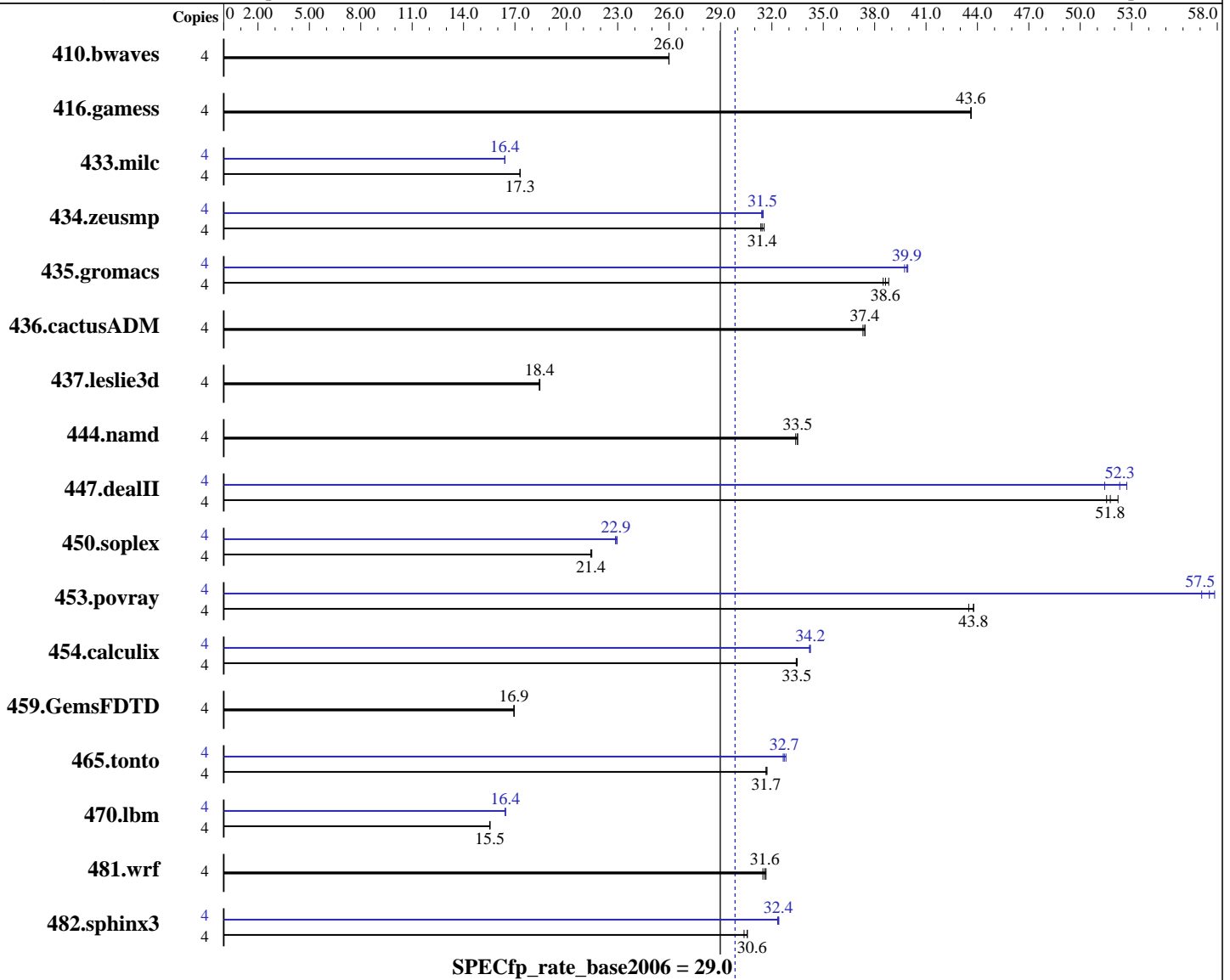
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Oct-2007

Hardware Availability: May-2007

Software Availability: Apr-2007



### Hardware

CPU Name: Intel Xeon 5110  
 CPU Characteristics: 1.60 GHz, 4MB L2, 1066MHz bus  
 CPU MHz: 1600  
 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 for 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 (8x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1x80 GB SATAII, 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	2092	26.0	<u>2092</u>	<u>26.0</u>	2091	26.0	4	2092	26.0	<u>2092</u>	<u>26.0</u>	2091	26.0
416.gamess	4	1796	43.6	1795	43.6	<u>1795</u>	<u>43.6</u>	4	1796	43.6	1795	43.6	<u>1795</u>	<u>43.6</u>
433.milc	4	<u>2122</u>	<u>17.3</u>	2123	17.3	2122	17.3	4	2237	16.4	<u>2238</u>	<u>16.4</u>	2238	16.4
434.zeusmp	4	1161	31.4	<u>1158</u>	<u>31.4</u>	1154	31.6	4	1156	31.5	<u>1157</u>	<u>31.5</u>	1159	31.4
435.gromacs	4	<u>739</u>	<u>38.6</u>	736	38.8	742	38.5	4	715	39.9	<u>716</u>	<u>39.9</u>	719	39.7
436.cactusADM	4	1277	37.4	<u>1277</u>	<u>37.4</u>	1281	37.3	4	1277	37.4	<u>1277</u>	<u>37.4</u>	1281	37.3
437.leslie3d	4	2041	18.4	2037	18.5	<u>2039</u>	<u>18.4</u>	4	2041	18.4	2037	18.5	<u>2039</u>	<u>18.4</u>
444.namd	4	<u>958</u>	<u>33.5</u>	961	33.4	958	33.5	4	<u>958</u>	<u>33.5</u>	961	33.4	958	33.5
447.dealII	4	877	52.2	888	51.5	<u>884</u>	<u>51.8</u>	4	890	51.4	868	52.7	<u>875</u>	<u>52.3</u>
450.soplex	4	1552	21.5	1556	21.4	<u>1556</u>	<u>21.4</u>	4	<u>1457</u>	<u>22.9</u>	1459	22.9	1452	23.0
453.povray	4	489	43.5	<u>486</u>	<u>43.8</u>	486	43.8	4	368	57.8	373	57.1	<u>370</u>	<u>57.5</u>
454.calculix	4	986	33.5	<u>986</u>	<u>33.5</u>	987	33.4	4	<u>964</u>	<u>34.2</u>	964	34.2	965	34.2
459.GemsFDTD	4	<u>2504</u>	<u>16.9</u>	2504	17.0	2504	16.9	4	<u>2504</u>	<u>16.9</u>	2504	17.0	2504	16.9
465.tonto	4	1241	31.7	1243	31.7	<u>1243</u>	<u>31.7</u>	4	1199	32.8	<u>1203</u>	<u>32.7</u>	1205	32.7
470.lbm	4	3537	15.5	<u>3537</u>	<u>15.5</u>	3537	15.5	4	<u>3342</u>	<u>16.4</u>	3341	16.4	3344	16.4
481.wrf	4	1411	31.7	<u>1415</u>	<u>31.6</u>	1419	31.5	4	1411	31.7	<u>1415</u>	<u>31.6</u>	1419	31.5
482.sphinx3	4	<u>2551</u>	<u>30.6</u>	2551	30.6	2566	30.4	4	2411	32.3	<u>2408</u>	<u>32.4</u>	2406	32.4

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 1066 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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**Hardware Availability:** May-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.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
```

## 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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