



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

Express5800/120Bb-m6  
(Intel Xeon processor E5345)

SPECfp<sup>®</sup>\_rate2006 = 55.2

SPECfp\_rate\_base2006 = 53.4

CPU2006 license: 9006

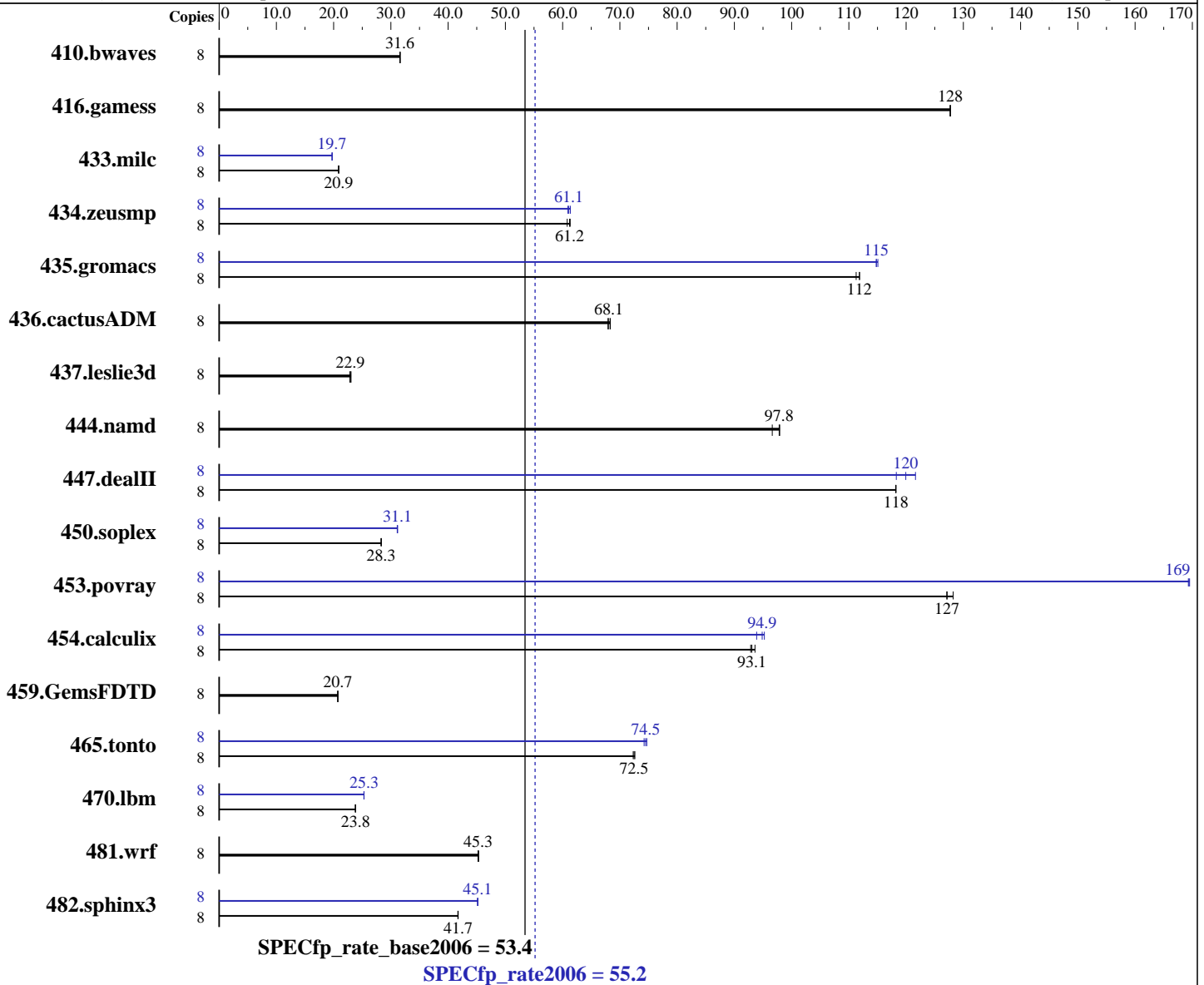
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Nov-2007

Hardware Availability: Jan-2007

Software Availability: Apr-2007



### Hardware

CPU Name: Intel Xeon E5345  
 CPU Characteristics: 2.33 GHz, 2x4 MB L2 shared, 1333 MHz bus  
 CPU MHz: 2333  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64),  
Kernel 2.6.16.21-0.8-smp  
 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: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1x73.2 GB SAS, 10000RPM  
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	8	3440	31.6	3440	31.6	<b>3440</b>	<b>31.6</b>	8	3440	31.6	3440	31.6	<b>3440</b>	<b>31.6</b>
416.gamess	8	1226	128	<b>1226</b>	<b>128</b>	1227	128	8	1226	128	<b>1226</b>	<b>128</b>	1227	128
433.milc	8	3515	20.9	<b>3516</b>	<b>20.9</b>	3523	20.8	8	3721	19.7	3722	19.7	<b>3722</b>	<b>19.7</b>
434.zeusmp	8	1197	60.8	<b>1189</b>	<b>61.2</b>	1187	61.3	8	<b>1192</b>	<b>61.1</b>	1195	60.9	1187	61.3
435.gromacs	8	511	112	<b>511</b>	<b>112</b>	513	111	8	<b>498</b>	<b>115</b>	498	115	496	115
436.cactusADM	8	1408	67.9	<b>1404</b>	<b>68.1</b>	1399	68.3	8	1408	67.9	<b>1404</b>	<b>68.1</b>	1399	68.3
437.leslie3d	8	3264	23.0	3294	22.8	<b>3279</b>	<b>22.9</b>	8	3264	23.0	3294	22.8	<b>3279</b>	<b>22.9</b>
444.namd	8	655	97.9	<b>656</b>	<b>97.8</b>	664	96.6	8	655	97.9	<b>656</b>	<b>97.8</b>	664	96.6
447.dealII	8	774	118	774	118	<b>774</b>	<b>118</b>	8	774	118	752	122	<b>763</b>	<b>120</b>
450.soplex	8	<b>2357</b>	<b>28.3</b>	2355	28.3	2359	28.3	8	2141	31.2	<b>2142</b>	<b>31.1</b>	2145	31.1
453.povray	8	332	128	<b>335</b>	<b>127</b>	335	127	8	251	169	251	170	<b>251</b>	<b>169</b>
454.calculix	8	711	92.8	<b>709</b>	<b>93.1</b>	705	93.6	8	693	95.2	<b>696</b>	<b>94.9</b>	703	93.9
459.GemsFDTD	8	<b>4096</b>	<b>20.7</b>	4099	20.7	4089	20.8	8	<b>4096</b>	<b>20.7</b>	4099	20.7	4089	20.8
465.tonto	8	1084	72.6	<b>1086</b>	<b>72.5</b>	1088	72.3	8	1060	74.2	1054	74.7	<b>1057</b>	<b>74.5</b>
470.lbm	8	<b>4617</b>	<b>23.8</b>	4617	23.8	4618	23.8	8	4342	25.3	<b>4343</b>	<b>25.3</b>	4348	25.3
481.wrf	8	<b>1974</b>	<b>45.3</b>	1971	45.3	1976	45.2	8	<b>1974</b>	<b>45.3</b>	1971	45.3	1976	45.2
482.sphinx3	8	3739	41.7	3734	41.8	<b>3736</b>	<b>41.7</b>	8	3449	45.2	3454	45.1	<b>3454</b>	<b>45.1</b>

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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**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-FP-linux-flags.html>

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

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