



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

Express5800/120Li  
(Intel Xeon processor E5345)

SPECfp<sup>®</sup>\_rate2006 = 55.1

SPECfp\_rate\_base2006 = 53.3

CPU2006 license: 9006

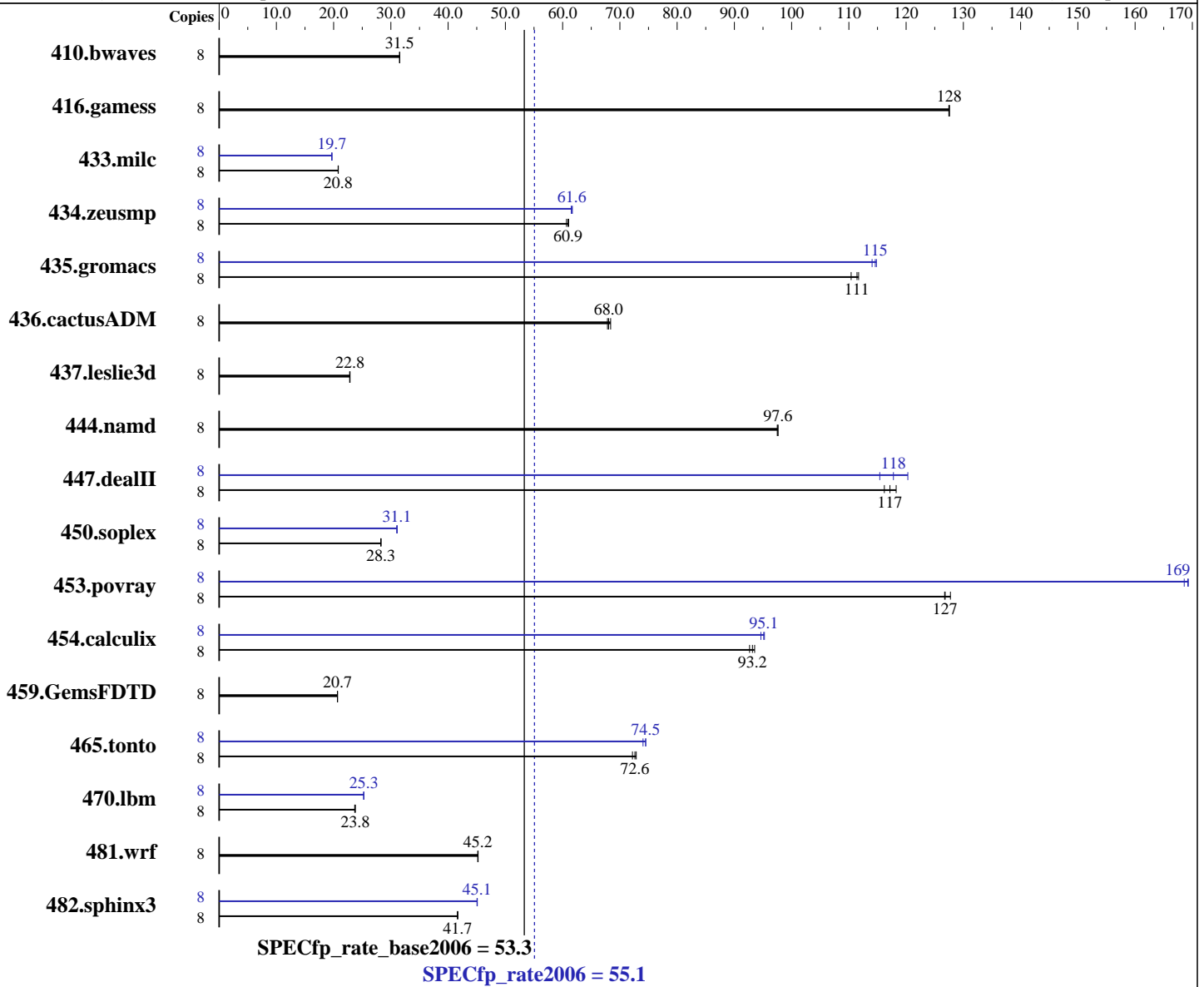
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Oct-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: 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: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1x73.2 GB SAS, 15000RPM  
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	3446	31.5	<b>3448</b>	<b>31.5</b>	3449	31.5	8	3446	31.5	<b>3448</b>	<b>31.5</b>	3449	31.5
416.gamess	8	<b>1228</b>	<b>128</b>	1228	128	1229	127	8	<b>1228</b>	<b>128</b>	1228	128	1229	127
433.milc	8	3534	20.8	3527	20.8	<b>3531</b>	<b>20.8</b>	8	3729	19.7	<b>3730</b>	<b>19.7</b>	3731	19.7
434.zeusmp	8	1200	60.7	1192	61.0	<b>1195</b>	<b>60.9</b>	8	1180	61.7	1184	61.5	<b>1182</b>	<b>61.6</b>
435.gromacs	8	511	112	<b>513</b>	<b>111</b>	517	110	8	497	115	<b>498</b>	<b>115</b>	501	114
436.cactusADM	8	<b>1405</b>	<b>68.0</b>	1398	68.4	1409	67.8	8	<b>1405</b>	<b>68.0</b>	1398	68.4	1409	67.8
437.leslie3d	8	3289	22.9	3299	22.8	<b>3292</b>	<b>22.8</b>	8	3289	22.9	3299	22.8	<b>3292</b>	<b>22.8</b>
444.namd	8	657	97.6	<b>657</b>	<b>97.6</b>	658	97.5	8	657	97.6	<b>657</b>	<b>97.6</b>	658	97.5
447.dealII	8	788	116	774	118	<b>781</b>	<b>117</b>	8	761	120	<b>777</b>	<b>118</b>	793	115
450.soplex	8	<b>2361</b>	<b>28.3</b>	2362	28.2	2360	28.3	8	2144	31.1	<b>2148</b>	<b>31.1</b>	2150	31.0
453.povray	8	336	127	333	128	<b>336</b>	<b>127</b>	8	<b>252</b>	<b>169</b>	252	169	251	169
454.calculix	8	706	93.5	<b>708</b>	<b>93.2</b>	712	92.7	8	693	95.3	697	94.6	<b>694</b>	<b>95.1</b>
459.GemsFDTD	8	4108	20.7	<b>4105</b>	<b>20.7</b>	4105	20.7	8	4108	20.7	<b>4105</b>	<b>20.7</b>	4105	20.7
465.tonto	8	<b>1084</b>	<b>72.6</b>	1080	72.9	1090	72.2	8	1056	74.5	1063	74.0	<b>1057</b>	<b>74.5</b>
470.lbm	8	<b>4624</b>	<b>23.8</b>	4643	23.7	4624	23.8	8	4351	25.3	<b>4351</b>	<b>25.3</b>	4351	25.3
481.wrf	8	1975	45.2	<b>1977</b>	<b>45.2</b>	1977	45.2	8	1975	45.2	<b>1977</b>	<b>45.2</b>	1977	45.2
482.sphinx3	8	3739	41.7	<b>3743</b>	<b>41.7</b>	3747	41.6	8	3457	45.1	3462	45.0	<b>3459</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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## 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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