



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

Express5800/T120b-E  
(Intel Xeon E5506)

SPECfp<sup>®</sup>2006 = 29.1

SPECfp\_base2006 = 27.7

CPU2006 license: 9006

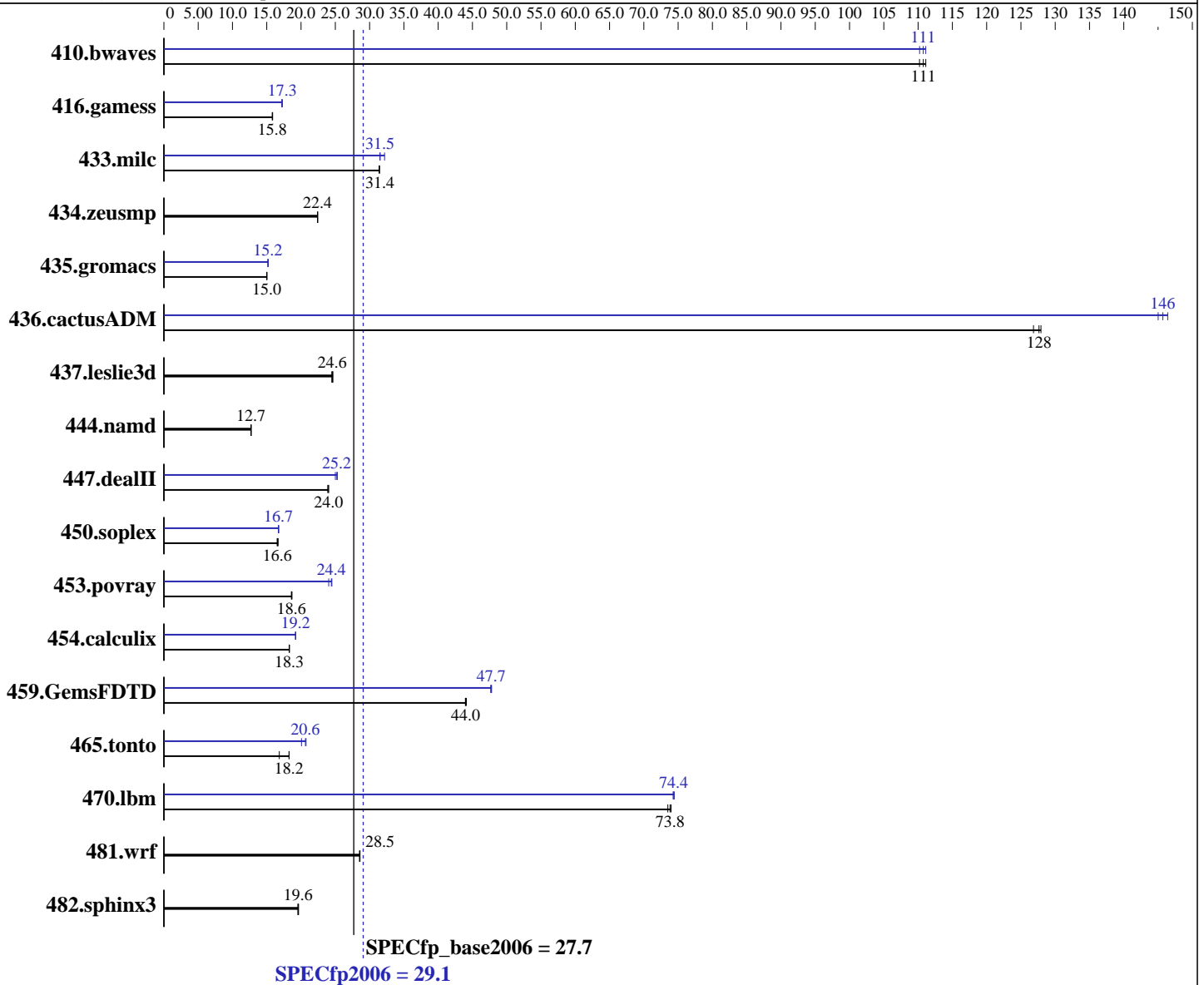
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Aug-2010

Hardware Availability: Jun-2010

Software Availability: Dec-2009



### Hardware

CPU Name: Intel Xeon E5506  
 CPU Characteristics:  
 CPU MHz: 2133  
 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: 256 KB I+D on chip per core

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### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64), Kernel 2.6.27.19-5-default  
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: I\_cproc\_p\_11.1.064, I\_cprof\_p\_11.1.064  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)

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L3 Cache: 4 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (12 x 4 GB PC3L-10600R, 2 rank, CL9, ECC, running at 800 MHz)  
Disk Subsystem: 1x160 GB SATA, 7200 RPM  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	123	110	122	111	<b>123</b>	<b>111</b>	122	111	123	110	<b>123</b>	<b>111</b>
416.gamess	1234	15.9	<b>1237</b>	<b>15.8</b>	1239	15.8	1134	17.3	<b>1135</b>	<b>17.3</b>	1139	17.2
433.milc	<b>292</b>	<b>31.4</b>	292	31.4	292	31.5	<b>291</b>	<b>31.5</b>	285	32.2	291	31.5
434.zeusmp	406	22.4	<b>406</b>	<b>22.4</b>	406	22.4	406	22.4	<b>406</b>	<b>22.4</b>	406	22.4
435.gromacs	476	15.0	475	15.0	<b>476</b>	<b>15.0</b>	471	15.2	469	15.2	<b>470</b>	<b>15.2</b>
436.cactusADM	93.4	128	94.2	127	<b>93.6</b>	<b>128</b>	81.6	146	<b>82.0</b>	<b>146</b>	82.4	145
437.leslie3d	381	24.7	384	24.5	<b>383</b>	<b>24.6</b>	381	24.7	384	24.5	<b>383</b>	<b>24.6</b>
444.namd	631	12.7	<b>631</b>	<b>12.7</b>	631	12.7	631	12.7	<b>631</b>	<b>12.7</b>	631	12.7
447.dealII	<b>476</b>	<b>24.0</b>	476	24.0	479	23.9	452	25.3	<b>454</b>	<b>25.2</b>	457	25.0
450.soplex	<b>504</b>	<b>16.6</b>	501	16.7	505	16.5	498	16.7	<b>499</b>	<b>16.7</b>	499	16.7
453.povray	286	18.6	285	18.7	<b>286</b>	<b>18.6</b>	221	24.0	<b>218</b>	<b>24.4</b>	217	24.5
454.calculix	451	18.3	<b>451</b>	<b>18.3</b>	451	18.3	<b>430</b>	<b>19.2</b>	430	19.2	429	19.2
459.GemsFDTD	241	44.0	241	44.1	<b>241</b>	<b>44.0</b>	222	47.8	223	47.7	<b>222</b>	<b>47.7</b>
465.tonto	<b>539</b>	<b>18.2</b>	539	18.3	585	16.8	475	20.7	<b>477</b>	<b>20.6</b>	490	20.1
470.lbm	187	73.5	186	74.0	<b>186</b>	<b>73.8</b>	185	74.3	185	74.4	<b>185</b>	<b>74.4</b>
481.wrf	<b>391</b>	<b>28.5</b>	391	28.5	391	28.6	<b>391</b>	<b>28.5</b>	391	28.5	391	28.6
482.sphinx3	992	19.6	<b>995</b>	<b>19.6</b>	998	19.5	992	19.6	<b>995</b>	<b>19.6</b>	998	19.5

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

## Platform Notes

BIOS setting:  
NUMA configuration : Disabled

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
KMP\_STACKSIZE set to 200M



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## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## 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:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch



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## Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-ansi-alias

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-parallel -ansi-alias -auto-ilp32

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: basepeak = yes

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias -scalar-rep- -auto-ilp32

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-malloc-options=3 -auto-ilp32

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll4 -ansi-alias

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-inline-alloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE-R120b.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE-R120b.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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