



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp®2006 = 20.5

PowerEdge T410 (Intel Xeon E5506, 2.13 GHz)

SPECfp\_base2006 = 19.6

CPU2006 license: 55

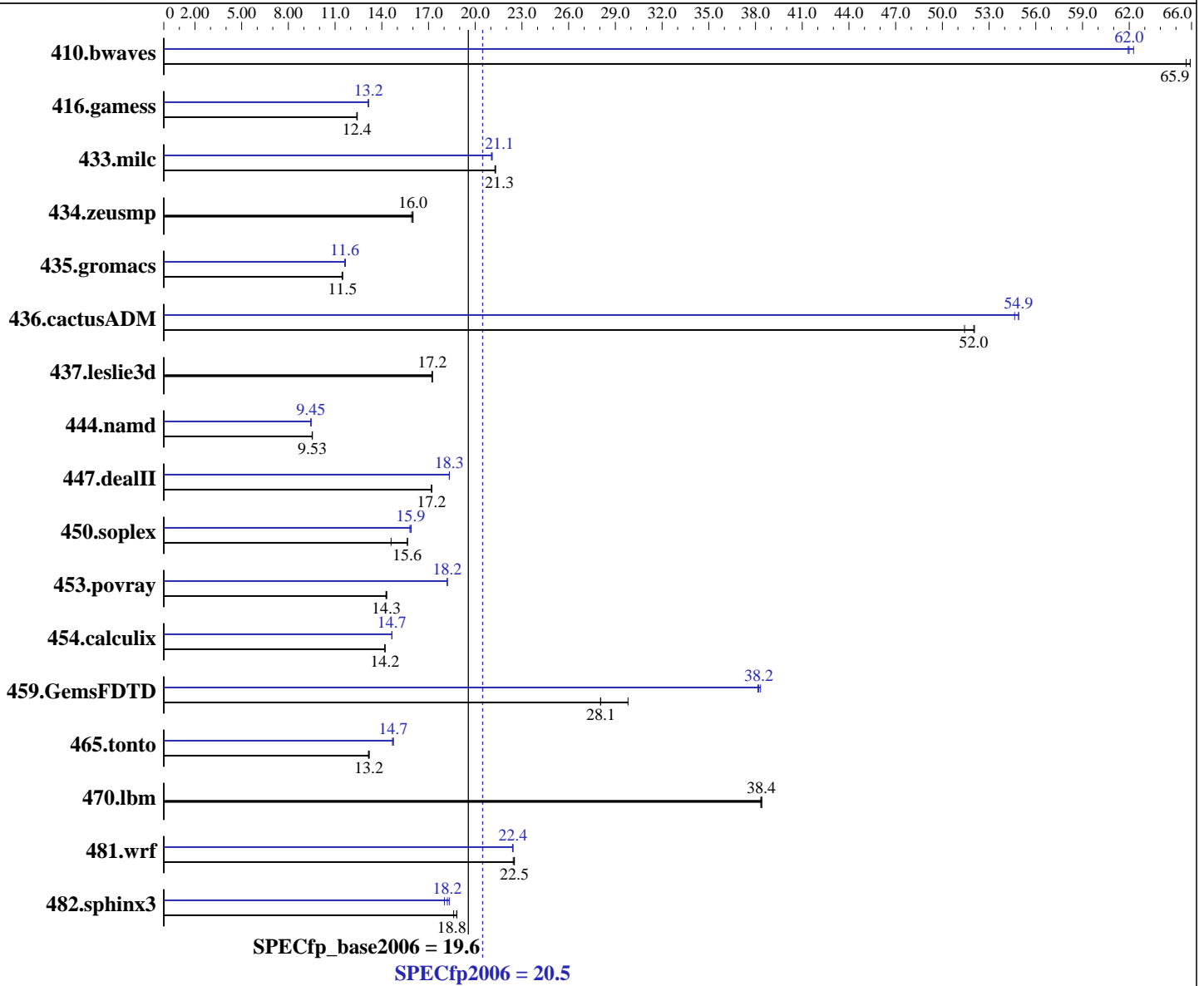
Test date: Mar-2009

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

Tested by: Dell Inc.

Software Availability: Feb-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 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ and Fortran Compiler Professional 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.080, l\_cprof\_p\_11.0.080  
 Auto Parallel: Yes  
 File System: ReiserFS  
 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: 24 GB (6 x 4 GB DDR3-1066 DR RDIMM downclocked to 800 MHz)  
Disk Subsystem: 1 x 160 GB 7200 RPM SATA  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b>206</b>	<b>65.9</b>	206	65.9	207	65.7	219	61.9	218	62.3	<b>219</b>	<b>62.0</b>
416.gamess	1576	12.4	1579	12.4	<b>1579</b>	<b>12.4</b>	1489	13.2	1492	13.1	<b>1489</b>	<b>13.2</b>
433.milc	431	21.3	432	21.3	<b>431</b>	<b>21.3</b>	436	21.0	435	21.1	<b>435</b>	<b>21.1</b>
434.zeusmp	572	15.9	569	16.0	<b>569</b>	<b>16.0</b>	572	15.9	569	16.0	<b>569</b>	<b>16.0</b>
435.gromacs	<b>622</b>	<b>11.5</b>	622	11.5	624	11.4	612	11.7	<b>614</b>	<b>11.6</b>	614	11.6
436.cactusADM	232	51.4	230	52.1	<b>230</b>	<b>52.0</b>	218	54.9	<b>218</b>	<b>54.9</b>	219	54.6
437.leslie3d	<b>545</b>	<b>17.2</b>	545	17.3	546	17.2	<b>545</b>	<b>17.2</b>	545	17.3	546	17.2
444.namd	840	9.54	<b>841</b>	<b>9.53</b>	842	9.53	849	9.44	<b>849</b>	<b>9.45</b>	848	9.46
447.dealII	<b>665</b>	<b>17.2</b>	665	17.2	666	17.2	624	18.3	624	18.3	<b>624</b>	<b>18.3</b>
450.soplex	<b>534</b>	<b>15.6</b>	571	14.6	533	15.7	528	15.8	525	15.9	<b>526</b>	<b>15.9</b>
453.povray	<b>372</b>	<b>14.3</b>	373	14.3	371	14.3	<b>292</b>	<b>18.2</b>	292	18.2	292	18.2
454.calculix	581	14.2	<b>581</b>	<b>14.2</b>	581	14.2	563	14.6	563	14.7	<b>563</b>	<b>14.7</b>
459.GemsFDTD	356	29.8	378	28.0	<b>378</b>	<b>28.1</b>	<b>278</b>	<b>38.2</b>	278	38.2	277	38.3
465.tonto	749	13.1	746	13.2	<b>747</b>	<b>13.2</b>	667	14.7	<b>668</b>	<b>14.7</b>	670	14.7
470.lbm	358	38.3	<b>358</b>	<b>38.4</b>	358	38.4	358	38.3	<b>358</b>	<b>38.4</b>	358	38.4
481.wrf	498	22.4	496	22.5	<b>496</b>	<b>22.5</b>	499	22.4	498	22.4	<b>498</b>	<b>22.4</b>
482.sphinx3	1047	18.6	1036	18.8	<b>1036</b>	<b>18.8</b>	1082	18.0	1063	18.3	<b>1070</b>	<b>18.2</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

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

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## Base Compiler Invocation (Continued)

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:

-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

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: icc -m32

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## Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## Peak 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.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  
 470.lbm: -DSPEC\_CPU\_LP64  
 481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX

## 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)  
-fno-alias

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -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)  
-fno-alias -auto-ilp32

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## Peak Optimization Flags (Continued)

447.dealIII: -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- -opt-prefetch

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

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

### 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)  
-unroll4 -auto

### 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: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel -auto-ilp32



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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.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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