



# SPEC<sup>®</sup> CFP2006 Result

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Dell Inc.

SPECfp<sup>®</sup>2006 = 24.3

PowerEdge 1950 III (Intel Xeon L5240, 3.00 GHz)

SPECfp\_base2006 = 23.3

CPU2006 license: 55

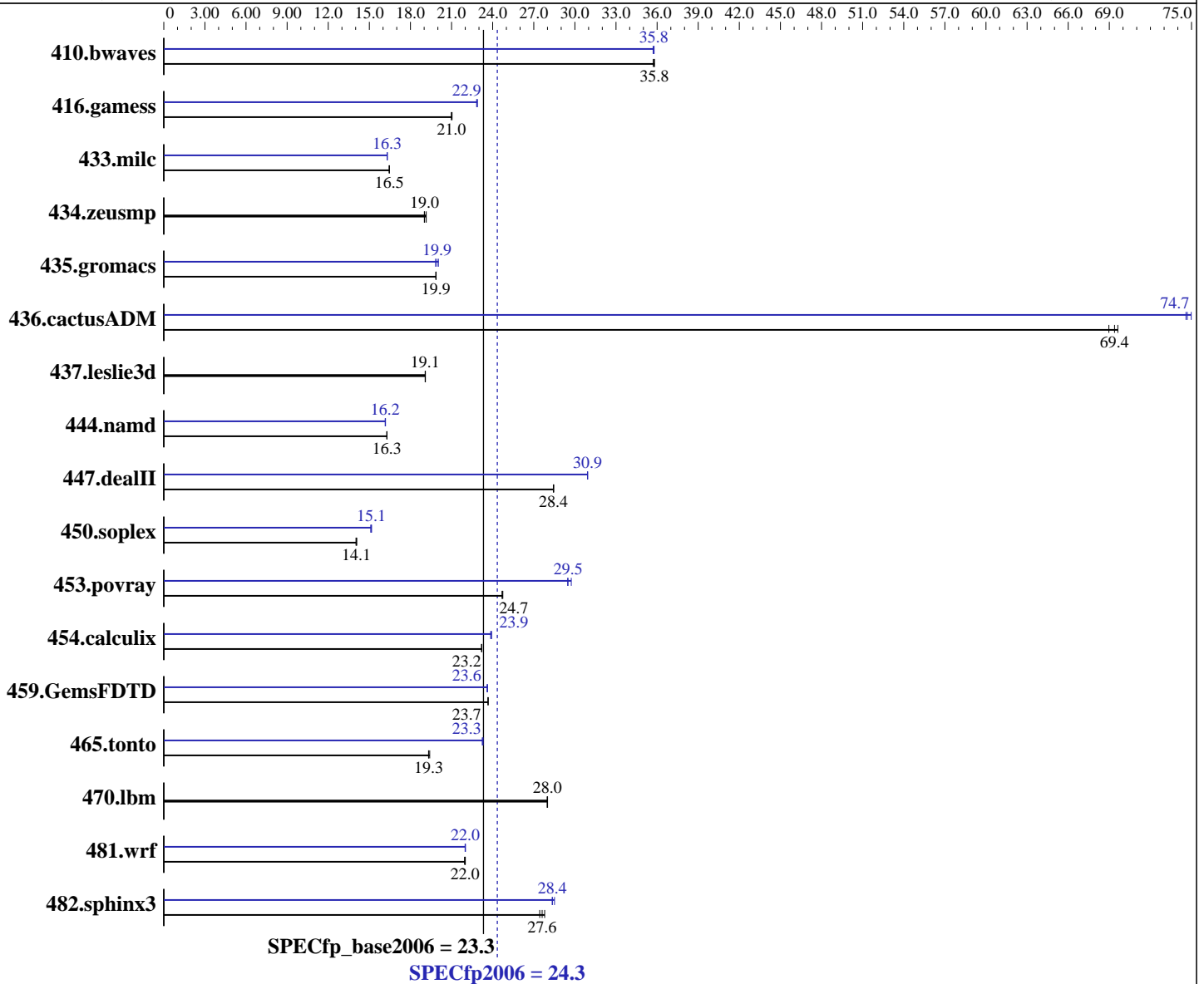
Test date: Oct-2008

Test sponsor: Dell Inc.

Hardware Availability: Sep-2008

Tested by: Dell Inc.

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon L5240  
 CPU Characteristics:  
 CPU MHz: 3000  
 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: 6 MB I+D on chip per chip

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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 11.0 for Linux Build 20080730 Package ID: l\_cproc\_b\_11.0.042, l\_fproc\_b\_11.0.042  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8 x 2 GB 667 MHz ECC CL5 FB-DIMM)  
Disk Subsystem: 1 x 73 GB 15000 RPM SAS  
Other Hardware: None

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>380</b>	<b>35.8</b>	380	35.8	381	35.7	380	35.8	381	35.7	<b>380</b>	<b>35.8</b>
416.gamess	933	21.0	931	21.0	<b>932</b>	<b>21.0</b>	856	22.9	<b>857</b>	<b>22.9</b>	858	22.8
433.milc	558	16.5	558	16.5	<b>558</b>	<b>16.5</b>	563	16.3	563	16.3	<b>563</b>	<b>16.3</b>
434.zeusmp	<b>478</b>	<b>19.0</b>	475	19.2	479	19.0	<b>478</b>	<b>19.0</b>	475	19.2	479	19.0
435.gromacs	359	19.9	360	19.9	<b>359</b>	<b>19.9</b>	356	20.0	360	19.8	<b>358</b>	<b>19.9</b>
436.cactusADM	<b>172</b>	<b>69.4</b>	173	69.0	172	69.6	<b>160</b>	<b>74.7</b>	159	75.0	160	74.6
437.leslie3d	492	19.1	<b>493</b>	<b>19.1</b>	493	19.1	492	19.1	<b>493</b>	<b>19.1</b>	493	19.1
444.namd	<b>493</b>	<b>16.3</b>	492	16.3	493	16.3	496	16.2	<b>496</b>	<b>16.2</b>	496	16.2
447.dealII	<b>402</b>	<b>28.4</b>	402	28.4	402	28.5	370	30.9	370	30.9	<b>370</b>	<b>30.9</b>
450.soplex	592	14.1	<b>593</b>	<b>14.1</b>	595	14.0	550	15.2	<b>551</b>	<b>15.1</b>	552	15.1
453.povray	215	24.7	215	24.7	<b>215</b>	<b>24.7</b>	<b>180</b>	<b>29.5</b>	179	29.7	181	29.5
454.calculix	356	23.2	<b>356</b>	<b>23.2</b>	356	23.2	<b>345</b>	<b>23.9</b>	345	23.9	346	23.9
459.GemsFDTD	<b>448</b>	<b>23.7</b>	448	23.7	448	23.7	450	23.6	449	23.6	<b>449</b>	<b>23.6</b>
465.tonto	507	19.4	509	19.3	<b>509</b>	<b>19.3</b>	422	23.3	423	23.2	<b>423</b>	<b>23.3</b>
470.lbm	491	28.0	<b>491</b>	<b>28.0</b>	491	28.0	491	28.0	<b>491</b>	<b>28.0</b>	491	28.0
481.wrf	<b>508</b>	<b>22.0</b>	508	22.0	509	21.9	<b>508</b>	<b>22.0</b>	507	22.0	508	22.0
482.sphinx3	701	27.8	710	27.4	<b>706</b>	<b>27.6</b>	684	28.5	<b>687</b>	<b>28.4</b>	688	28.3

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 stack size to unlimited prior to run

## General Notes

OMP\_NUM\_THREADS set to number of processors  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 200M

## Base Compiler Invocation

C benchmarks:  
icc

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## Base Compiler Invocation (Continued)

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:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc  
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc  
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

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.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  
470.lbm: -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) -xSSE4.1 -ipo -O3  
-no-prec-div -static -fno-alias

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## Peak Optimization Flags (Continued)

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -fno-alias -auto-ilp32

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

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

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

### Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

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

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -auto

### Benchmarks using both Fortran and C:

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

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

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

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## Peak Optimization Flags (Continued)

481.wrf: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.05.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.11.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.05.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.11.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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