



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®2006 = 24.7

PowerEdge 2900 III (Intel Xeon E5450, 3.00 GHz)

SPECfp_base2006 = 23.7

CPU2006 license: 55

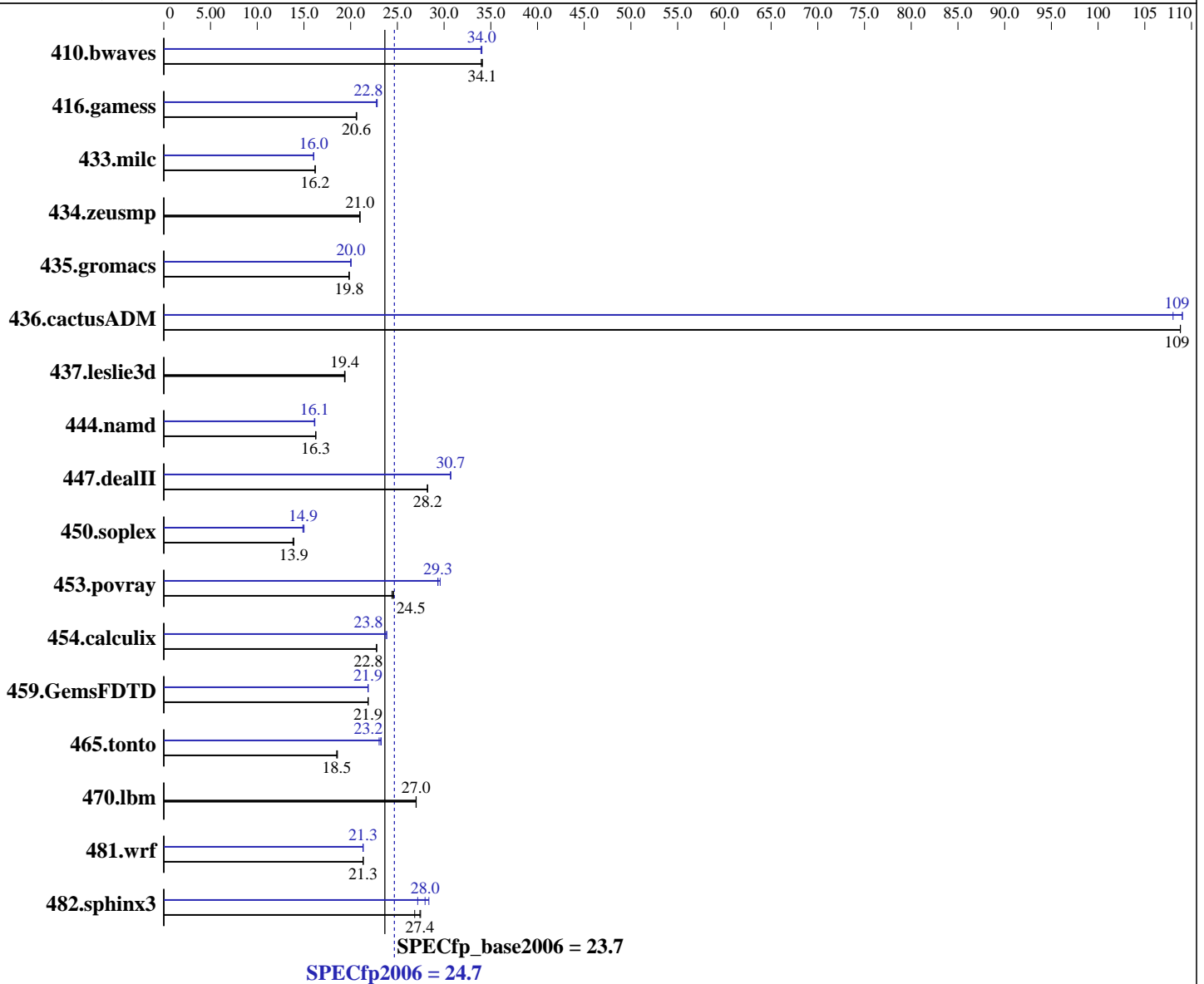
Test date: Nov-2008

Test sponsor: Dell Inc.

Hardware Availability: Sep-2008

Tested by: Dell Inc.

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E5450
 CPU Characteristics:
 CPU MHz: 3000
 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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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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: 2 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	<u>399</u>	<u>34.1</u>	399	34.1	400	34.0	<u>400</u>	<u>34.0</u>	400	33.9	399	34.1
416.gamess	948	20.6	951	20.6	<u>949</u>	<u>20.6</u>	861	22.8	857	22.8	<u>859</u>	<u>22.8</u>
433.milc	<u>567</u>	<u>16.2</u>	567	16.2	567	16.2	<u>572</u>	<u>16.0</u>	572	16.0	572	16.0
434.zeusmp	<u>434</u>	<u>21.0</u>	433	21.0	434	21.0	<u>434</u>	<u>21.0</u>	433	21.0	434	21.0
435.gromacs	360	19.9	<u>360</u>	<u>19.8</u>	360	19.8	<u>357</u>	<u>20.0</u>	356	20.0	357	20.0
436.cactusADM	110	109	110	109	<u>110</u>	<u>109</u>	110	109	111	108	<u>110</u>	<u>109</u>
437.leslie3d	<u>485</u>	<u>19.4</u>	485	19.4	486	19.3	<u>485</u>	<u>19.4</u>	485	19.4	486	19.3
444.namd	493	16.3	494	16.2	<u>493</u>	<u>16.3</u>	<u>497</u>	<u>16.1</u>	498	16.1	496	16.2
447.dealII	<u>405</u>	<u>28.2</u>	405	28.2	406	28.2	373	30.7	<u>373</u>	<u>30.7</u>	373	30.7
450.soplex	599	13.9	<u>599</u>	<u>13.9</u>	604	13.8	560	14.9	<u>559</u>	<u>14.9</u>	555	15.0
453.povray	<u>217</u>	<u>24.5</u>	218	24.4	216	24.6	180	29.6	<u>181</u>	<u>29.3</u>	181	29.3
454.calculix	362	22.8	<u>362</u>	<u>22.8</u>	363	22.7	<u>346</u>	<u>23.8</u>	349	23.7	346	23.9
459.GemsFDTD	485	21.9	<u>485</u>	<u>21.9</u>	485	21.9	485	21.9	<u>485</u>	<u>21.9</u>	485	21.9
465.tonto	529	18.6	<u>531</u>	<u>18.5</u>	531	18.5	423	23.3	<u>424</u>	<u>23.2</u>	427	23.0
470.lbm	509	27.0	<u>509</u>	<u>27.0</u>	509	27.0	509	27.0	<u>509</u>	<u>27.0</u>	509	27.0
481.wrf	524	21.3	523	21.3	<u>523</u>	<u>21.3</u>	<u>524</u>	<u>21.3</u>	524	21.3	523	21.3
482.sphinx3	726	26.9	709	27.5	<u>711</u>	<u>27.4</u>	687	28.4	717	27.2	<u>697</u>	<u>28.0</u>

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.dealIII: -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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