



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®_rate2006 = 63.5

PowerEdge 2950 III (Intel Xeon E5405, 2.00 GHz)

SPECfp_rate_base2006 = 58.2

CPU2006 license: 55

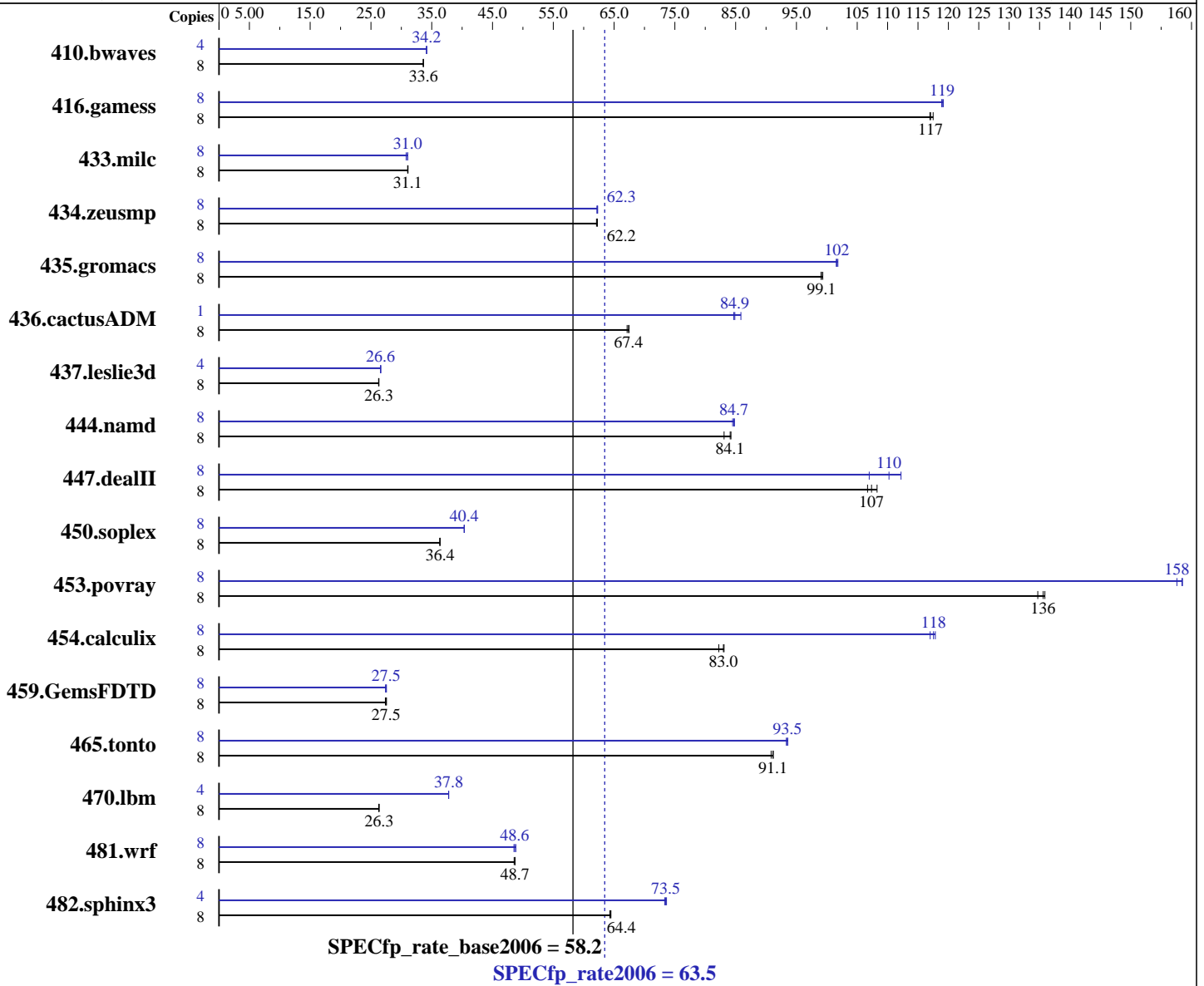
Test date: Feb-2008

Test sponsor: Dell Inc.

Hardware Availability: Jan-2008

Tested by: Dell Inc.

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5405
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2000
 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) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
 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: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3236	33.6	<u>3233</u>	<u>33.6</u>	3233	33.6	4	1593	34.1	1591	34.2	<u>1591</u>	<u>34.2</u>
416.gamess	8	1339	117	<u>1338</u>	<u>117</u>	1333	117	8	1314	119	1317	119	<u>1316</u>	<u>119</u>
433.milc	8	<u>2365</u>	<u>31.1</u>	2366	31.0	2361	31.1	8	<u>2367</u>	<u>31.0</u>	2386	30.8	2366	31.0
434.zeusmp	8	1169	62.3	1172	62.1	<u>1170</u>	<u>62.2</u>	8	1169	62.3	<u>1169</u>	<u>62.3</u>	1171	62.2
435.gromacs	8	575	99.3	<u>576</u>	<u>99.1</u>	577	99.0	8	561	102	562	102	<u>562</u>	<u>102</u>
436.cactusADM	8	<u>1419</u>	<u>67.4</u>	1424	67.1	1417	67.5	1	141	84.7	139	85.9	<u>141</u>	<u>84.9</u>
437.leslie3d	8	<u>2860</u>	<u>26.3</u>	2864	26.3	2859	26.3	4	<u>1414</u>	<u>26.6</u>	1413	26.6	1415	26.6
444.namd	8	<u>763</u>	<u>84.1</u>	762	84.2	772	83.1	8	759	84.5	757	84.8	<u>758</u>	<u>84.7</u>
447.dealII	8	858	107	845	108	<u>853</u>	<u>107</u>	8	856	107	816	112	<u>830</u>	<u>110</u>
450.soplex	8	1834	36.4	<u>1835</u>	<u>36.4</u>	1837	36.3	8	1655	40.3	<u>1653</u>	<u>40.4</u>	1652	40.4
453.povray	8	316	135	313	136	<u>314</u>	<u>136</u>	8	268	159	270	158	<u>269</u>	<u>158</u>
454.calculix	8	794	83.1	<u>795</u>	<u>83.0</u>	803	82.2	8	<u>561</u>	<u>118</u>	560	118	564	117
459.GemsFDTD	8	3101	27.4	3080	27.6	<u>3089</u>	<u>27.5</u>	8	3098	27.4	<u>3089</u>	<u>27.5</u>	3081	27.6
465.tonto	8	863	91.2	867	90.8	<u>864</u>	<u>91.1</u>	8	841	93.6	843	93.3	<u>842</u>	<u>93.5</u>
470.lbm	8	<u>4175</u>	<u>26.3</u>	4173	26.3	4184	26.3	4	1454	37.8	1455	37.8	<u>1455</u>	<u>37.8</u>
481.wrf	8	1834	48.7	<u>1834</u>	<u>48.7</u>	1840	48.6	8	<u>1837</u>	<u>48.6</u>	1830	48.8	1841	48.5
482.sphinx3	8	2425	64.3	<u>2422</u>	<u>64.4</u>	2418	64.5	4	<u>1061</u>	<u>73.5</u>	1059	73.6	1063	73.3

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Invocation Notes

OMP_NUM_THREADS set to number of cores
KMP_STACK_SIZE set to 64M
KMP_AFFINITY set to physical,0

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



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Platform Notes

BIOS Settings:

Adjacent Cache Line Prefetch = Disabled (default Enabled)

Hardware Prefetcher = Disabled (default Enabled)

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

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Base Optimization Flags (Continued)

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

Peak Compiler Invocation

C benchmarks (except as noted below):

/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/include

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
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



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Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

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Peak Optimization Flags (Continued)

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.03.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.03.xml>

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For other inquiries, please contact webmaster@spec.org.

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