



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]_rate2006 = 70.0

PowerEdge 2950 III (Intel Xeon E5420, 2.50 GHz)

SPECfp_rate_base2006 = 63.6

CPU2006 license: 55

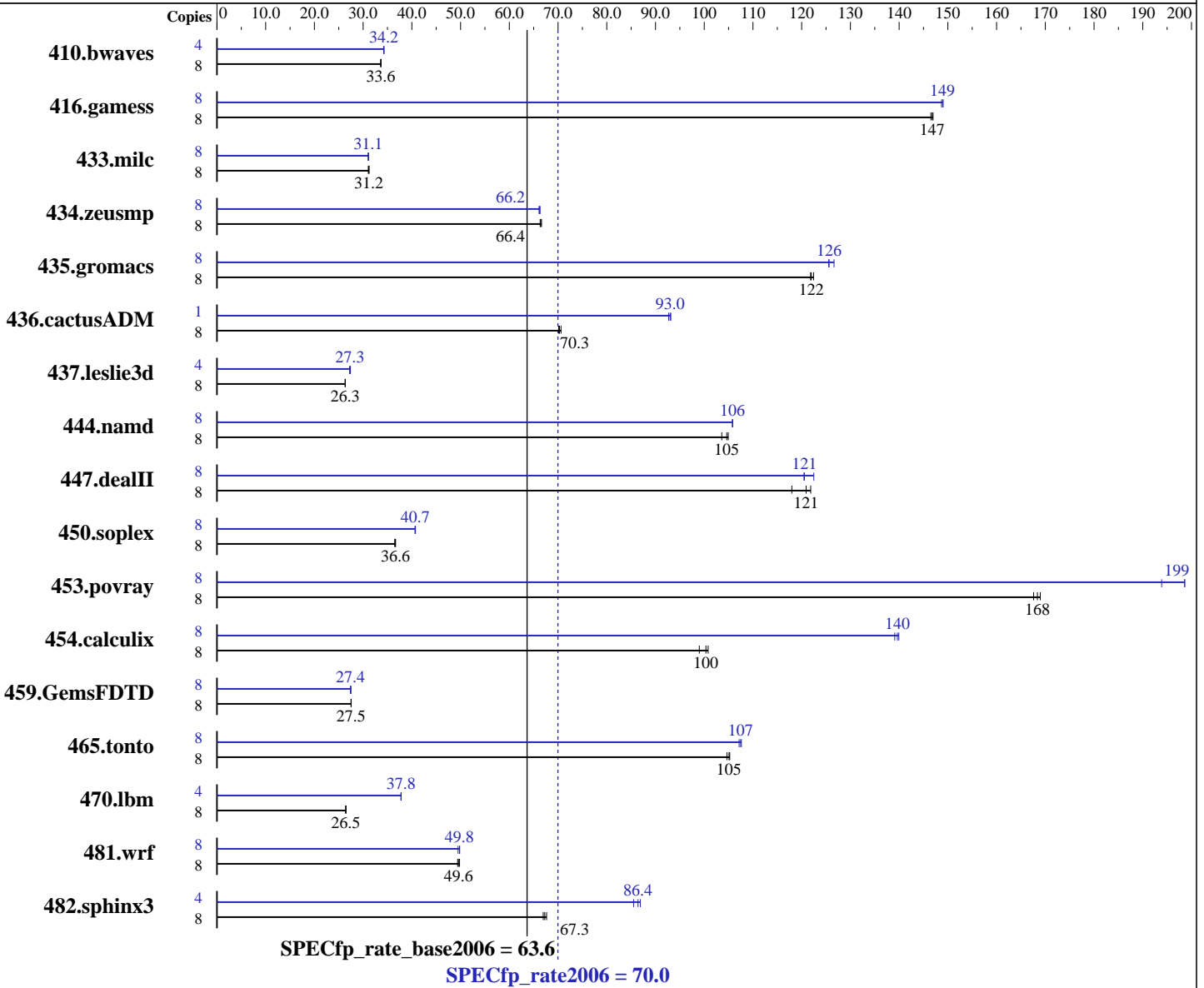
Test date: Jan-2008

Test sponsor: Dell Inc.

Hardware Availability: Nov-2007

Tested by: Dell Inc.

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5420
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2500
 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: Multi-user, run level 3
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB DDR2-667 ECC CL5 FB-DIMM)
Disk Subsystem: 1 x 73 GB SAS 15k RPM
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	<u>3232</u>	<u>33.6</u>	3234	33.6	3230	33.7	4	1585	34.3	<u>1587</u>	<u>34.2</u>	1588	34.2
416.gamess	8	<u>1067</u>	<u>147</u>	1069	147	1066	147	8	<u>1052</u>	<u>149</u>	1053	149	1051	149
433.milc	8	<u>2355</u>	<u>31.2</u>	2353	31.2	2364	31.1	8	<u>2363</u>	<u>31.1</u>	2361	31.1	2368	31.0
434.zeusmp	8	1098	66.3	1093	66.6	<u>1096</u>	<u>66.4</u>	8	1098	66.3	1101	66.1	<u>1099</u>	<u>66.2</u>
435.gromacs	8	469	122	467	122	<u>468</u>	<u>122</u>	8	<u>455</u>	<u>126</u>	451	127	455	126
436.cactusADM	8	1354	70.6	<u>1360</u>	<u>70.3</u>	1363	70.1	1	<u>128</u>	<u>93.0</u>	129	92.7	128	93.2
437.leslie3d	8	2854	26.3	<u>2856</u>	<u>26.3</u>	2859	26.3	4	1372	27.4	<u>1376</u>	<u>27.3</u>	1382	27.2
444.namd	8	619	104	<u>613</u>	<u>105</u>	611	105	8	<u>606</u>	<u>106</u>	606	106	606	106
447.dealII	8	776	118	751	122	<u>757</u>	<u>121</u>	8	<u>759</u>	<u>121</u>	747	122	760	120
450.soplex	8	1820	36.7	1829	36.5	<u>1822</u>	<u>36.6</u>	8	1642	40.6	<u>1639</u>	<u>40.7</u>	1638	40.7
453.povray	8	252	169	254	168	<u>253</u>	<u>168</u>	8	<u>214</u>	<u>199</u>	214	199	220	194
454.calculix	8	<u>658</u>	<u>100</u>	667	99.0	655	101	8	472	140	474	139	<u>473</u>	<u>140</u>
459.GemsFDTD	8	<u>3083</u>	<u>27.5</u>	3081	27.6	3084	27.5	8	3097	27.4	3085	27.5	<u>3095</u>	<u>27.4</u>
465.tonto	8	748	105	<u>749</u>	<u>105</u>	752	105	8	735	107	<u>732</u>	<u>107</u>	731	108
470.lbm	8	4157	26.4	4155	26.5	<u>4155</u>	<u>26.5</u>	4	1455	37.8	<u>1455</u>	<u>37.8</u>	1453	37.8
481.wrf	8	1795	49.8	1809	49.4	<u>1803</u>	<u>49.6</u>	8	1794	49.8	1806	49.5	<u>1795</u>	<u>49.8</u>
482.sphinx3	8	<u>2318</u>	<u>67.3</u>	2305	67.7	2329	67.0	4	<u>902</u>	<u>86.4</u>	897	86.9	912	85.5

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.20090714.11.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.20090714.11.xml>

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

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