



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®_rate2006 = 62.1

PowerEdge M600 (Intel Xeon E5405, 2.00 GHz)

SPECfp_rate_base2006 = 58.3

CPU2006 license: 55

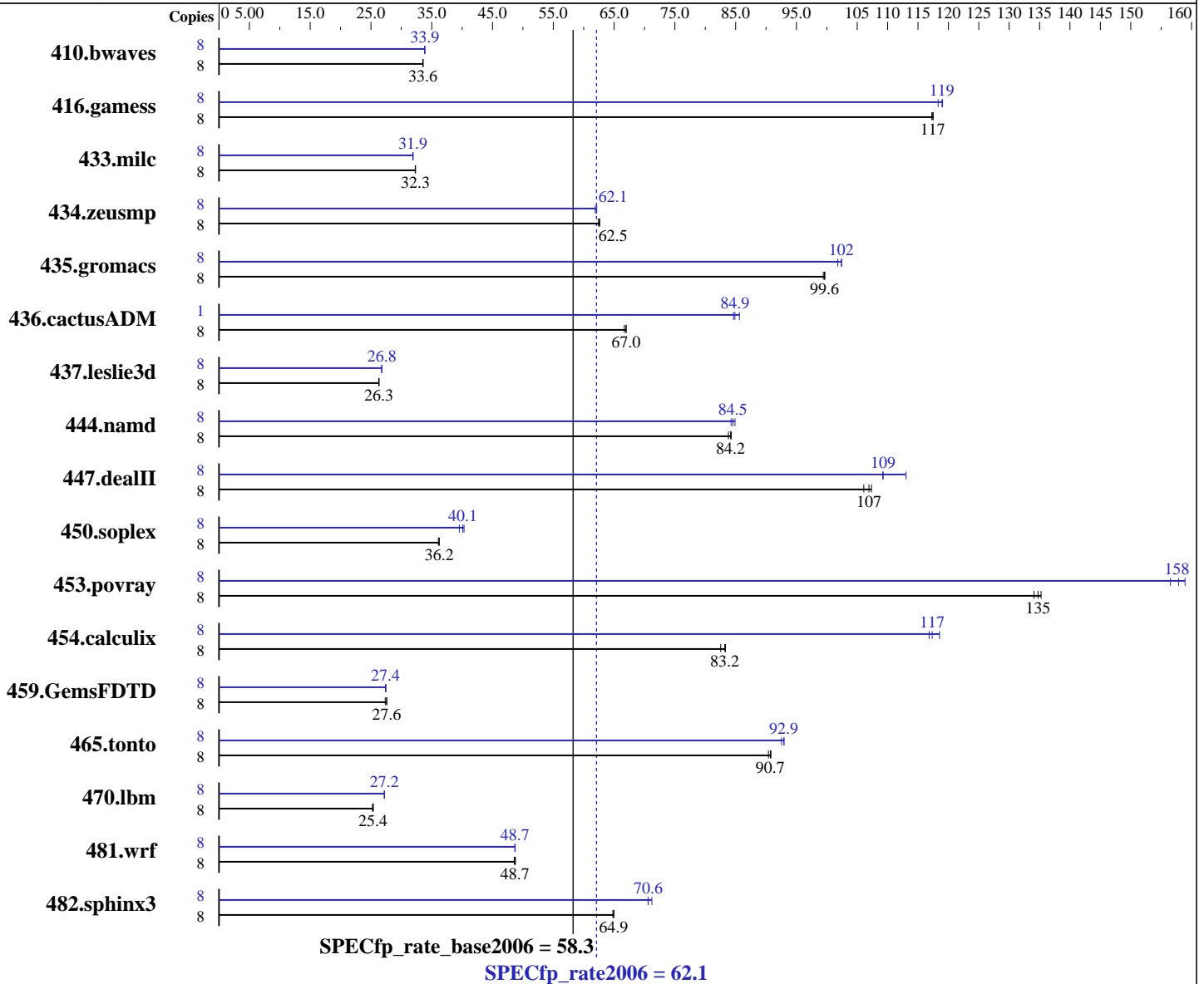
Test date: Jul-2008

Test sponsor: Dell Inc.

Hardware Availability: Jan-2008

Tested by: Dell Inc.

Software Availability: Jan-2008



Hardware

CPU Name: Intel Xeon E5405
 CPU Characteristics:
 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

Continued on next page

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 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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Hardware (Continued)

L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB 667 MHz ECC CL5 FB-DIMM)
Disk Subsystem: 1 x 80 GB 5400 RPM SATA
Other Hardware: None

Software (Continued)

Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1
Binutils 2.17.50.0.15

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	<u>3239</u>	<u>33.6</u>	3242	33.5	3238	33.6	8	3212	33.9	<u>3211</u>	<u>33.9</u>	3211	33.9		
416.gamess	8	1333	118	<u>1334</u>	<u>117</u>	1336	117	8	1316	119	1324	118	<u>1317</u>	<u>119</u>		
433.milc	8	2275	32.3	<u>2273</u>	<u>32.3</u>	2271	32.3	8	2304	31.9	2300	31.9	<u>2301</u>	<u>31.9</u>		
434.zeusmp	8	<u>1165</u>	<u>62.5</u>	1166	62.5	1162	62.6	8	1176	61.9	<u>1172</u>	<u>62.1</u>	1172	62.1		
435.gromacs	8	<u>573</u>	<u>99.6</u>	573	99.7	575	99.4	8	561	102	558	102	<u>558</u>	<u>102</u>		
436.cactusADM	8	1433	66.7	<u>1427</u>	<u>67.0</u>	1427	67.0	1	<u>141</u>	<u>84.9</u>	141	84.6	140	85.6		
437.leslie3d	8	<u>2859</u>	<u>26.3</u>	2859	26.3	2856	26.3	8	2805	26.8	2809	26.8	<u>2807</u>	<u>26.8</u>		
444.namd	8	766	83.8	<u>762</u>	<u>84.2</u>	761	84.3	8	<u>759</u>	<u>84.5</u>	762	84.2	756	84.9		
447.dealII	8	853	107	<u>856</u>	<u>107</u>	863	106	8	<u>838</u>	<u>109</u>	810	113	838	109		
450.soplex	8	1842	36.2	<u>1842</u>	<u>36.2</u>	1848	36.1	8	1687	39.5	<u>1663</u>	<u>40.1</u>	1655	40.3		
453.povray	8	315	135	<u>316</u>	<u>135</u>	317	134	8	<u>270</u>	<u>158</u>	272	157	268	159		
454.calculix	8	800	82.5	<u>793</u>	<u>83.2</u>	792	83.3	8	565	117	<u>563</u>	<u>117</u>	557	119		
459.GemsFDTD	8	3076	27.6	3104	27.3	<u>3076</u>	<u>27.6</u>	8	<u>3096</u>	<u>27.4</u>	3098	27.4	3091	27.5		
465.tonto	8	867	90.8	<u>868</u>	<u>90.7</u>	871	90.4	8	851	92.5	847	93.0	<u>847</u>	<u>92.9</u>		
470.lbm	8	4353	25.3	<u>4334</u>	<u>25.4</u>	4332	25.4	8	4040	27.2	<u>4040</u>	<u>27.2</u>	4039	27.2		
481.wrf	8	<u>1835</u>	<u>48.7</u>	1833	48.8	1839	48.6	8	1836	48.7	1834	48.7	<u>1835</u>	<u>48.7</u>		
482.sphinx3	8	<u>2401</u>	<u>64.9</u>	2406	64.8	2400	65.0	8	<u>2208</u>	<u>70.6</u>	2209	70.6	2189	71.2		

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/Dell-Intel-ic10.1-fp-linux64-revC.html>

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

<http://www.spec.org/cpu2006/flags/Dell-Intel-ic10.1-fp-linux64-revC.xml>

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

Tested with SPEC CPU2006 v1.0.
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