



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]_rate2006 = 77.6

PowerEdge 1950 III (Intel Xeon X5460, 3.16 GHz)

SPECfp_rate_base2006 = 69.7

CPU2006 license: 55

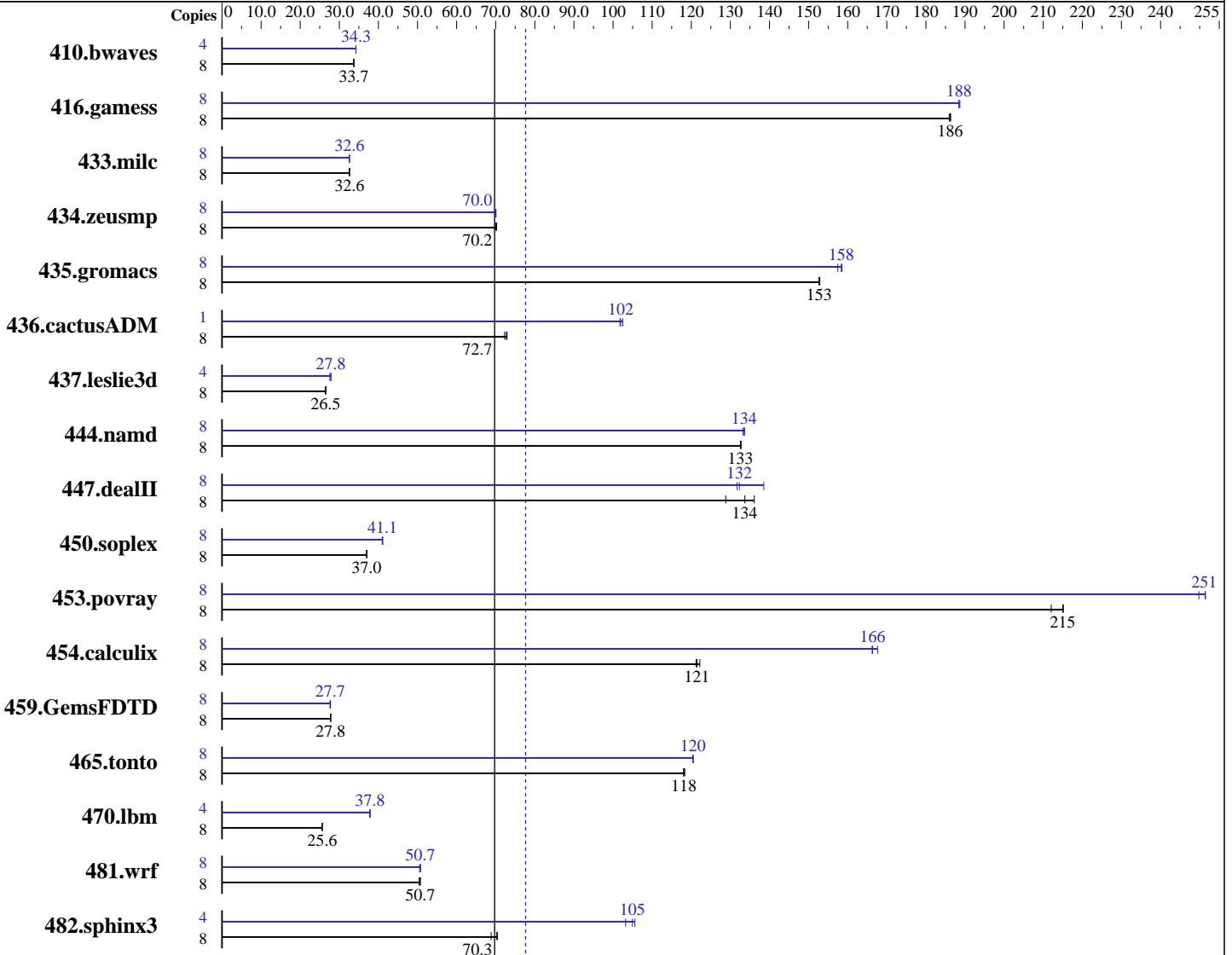
Test date: Jan-2008

Test sponsor: Dell Inc.

Hardware Availability: Nov-2007

Tested by: Dell Inc.

Software Availability: Nov-2007



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Hardware

CPU Name: Intel Xeon X5460
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 3166
 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	3225	33.7	3224	33.7	<u>3224</u>	<u>33.7</u>	4	1587	34.2	<u>1587</u>	<u>34.3</u>	1586	34.3		
416.gamess	8	842	186	841	186	<u>841</u>	<u>186</u>	8	831	188	<u>831</u>	<u>188</u>	830	189		
433.milc	8	2256	32.5	2251	32.6	<u>2251</u>	<u>32.6</u>	8	2259	32.5	2252	32.6	<u>2254</u>	<u>32.6</u>		
434.zeusmp	8	<u>1037</u>	<u>70.2</u>	1040	70.0	1037	70.2	8	<u>1040</u>	<u>70.0</u>	1039	70.1	1043	69.8		
435.gromacs	8	374	153	374	153	<u>374</u>	<u>153</u>	8	363	157	360	159	<u>361</u>	<u>158</u>		
436.cactusADM	8	1323	72.3	<u>1315</u>	<u>72.7</u>	1312	72.9	1	117	103	117	102	<u>117</u>	<u>102</u>		
437.leslie3d	8	<u>2836</u>	<u>26.5</u>	2834	26.5	2839	26.5	4	<u>1350</u>	<u>27.8</u>	1350	27.8	1363	27.6		
444.namd	8	483	133	<u>484</u>	<u>133</u>	484	133	8	480	134	482	133	<u>480</u>	<u>134</u>		
447.dealII	8	710	129	<u>685</u>	<u>134</u>	672	136	8	<u>692</u>	<u>132</u>	661	139	695	132		
450.soplex	8	1803	37.0	1804	37.0	<u>1804</u>	<u>37.0</u>	8	<u>1624</u>	<u>41.1</u>	1629	41.0	1624	41.1		
453.povray	8	<u>198</u>	<u>215</u>	201	212	198	215	8	<u>169</u>	<u>251</u>	169	251	170	250		
454.calculix	8	<u>543</u>	<u>121</u>	544	121	540	122	8	397	166	394	168	<u>397</u>	<u>166</u>		
459.GemsFDTD	8	3058	27.8	3050	27.8	<u>3055</u>	<u>27.8</u>	8	<u>3067</u>	<u>27.7</u>	3071	27.6	3058	27.8		
465.tonto	8	<u>667</u>	<u>118</u>	667	118	665	118	8	654	120	653	121	<u>654</u>	<u>120</u>		
470.lbm	8	4289	25.6	<u>4292</u>	<u>25.6</u>	4292	25.6	4	<u>1452</u>	<u>37.8</u>	1451	37.9	1453	37.8		
481.wrf	8	<u>1763</u>	<u>50.7</u>	1772	50.4	1762	50.7	8	1760	50.8	1769	50.5	<u>1761</u>	<u>50.7</u>		
482.sphinx3	8	<u>2219</u>	<u>70.3</u>	2214	70.4	2266	68.8	4	755	103	<u>743</u>	<u>105</u>	738	106		

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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