



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]_rate2006 = 73.8

PowerEdge 2950 III (Intel Xeon E5440, 2.83 GHz)

SPECfp_rate_base2006 = 66.6

CPU2006 license: 55

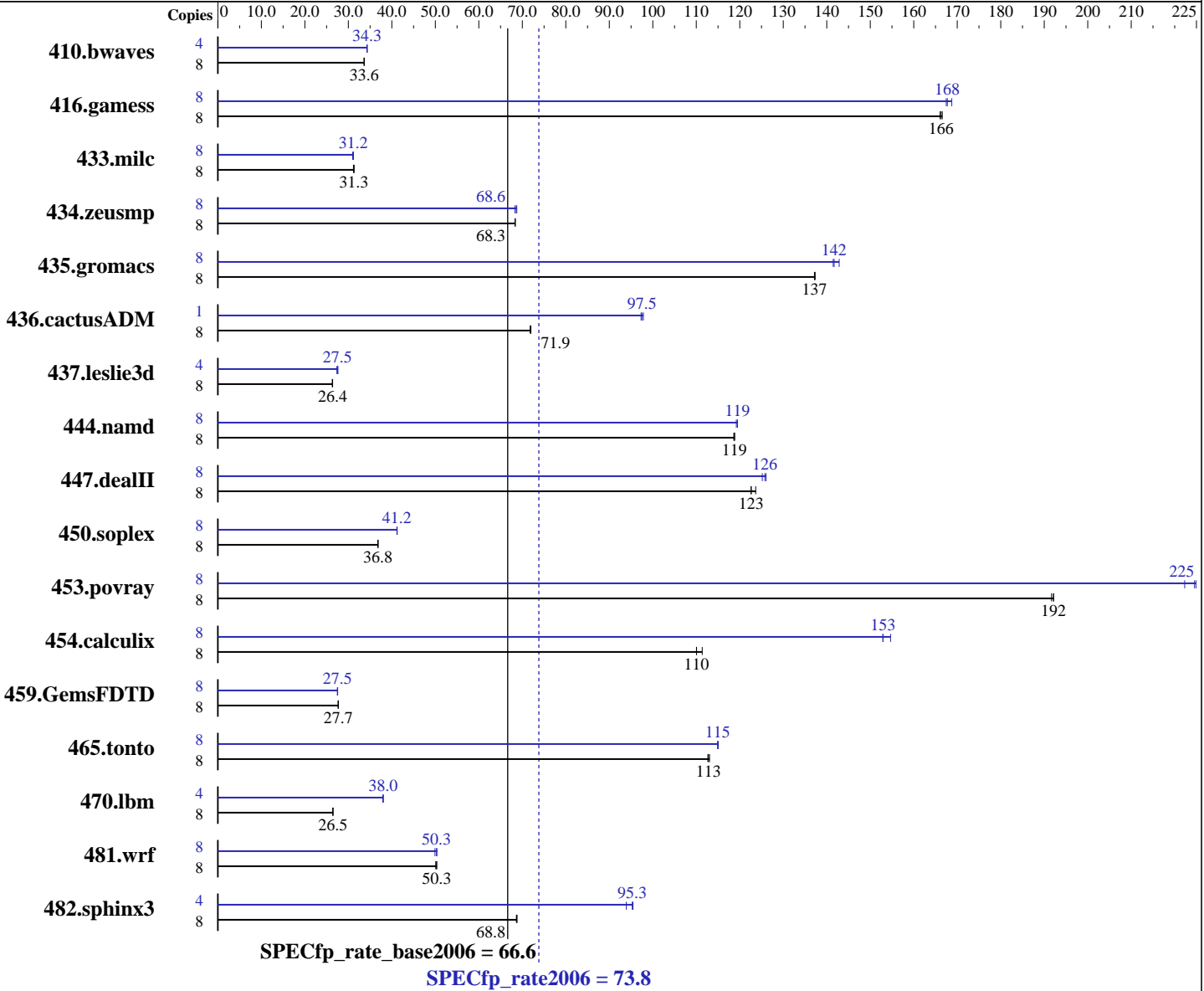
Test date: Nov-2007

Test sponsor: Dell Inc.

Hardware Availability: Nov-2007

Tested by: Dell Inc.

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5440
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2833
 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) 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

Continued on next page



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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB 667 MHz 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	3231	33.6	3234	33.6	<u>3232</u>	<u>33.6</u>	4	1585	34.3	<u>1584</u>	<u>34.3</u>	1584	34.3
416.gamess	8	<u>942</u>	<u>166</u>	940	167	943	166	8	928	169	935	167	<u>934</u>	<u>168</u>
433.milc	8	<u>2347</u>	<u>31.3</u>	2355	31.2	2346	31.3	8	2369	31.0	<u>2356</u>	<u>31.2</u>	2356	31.2
434.zeusmp	8	1064	68.4	<u>1065</u>	<u>68.3</u>	1065	68.3	8	1059	68.7	<u>1061</u>	<u>68.6</u>	1066	68.3
435.gromacs	8	416	137	<u>416</u>	<u>137</u>	416	137	8	404	141	400	143	<u>403</u>	<u>142</u>
436.cactusADM	8	1331	71.8	<u>1330</u>	<u>71.9</u>	1328	72.0	1	122	97.8	123	97.3	<u>123</u>	<u>97.5</u>
437.leslie3d	8	<u>2850</u>	<u>26.4</u>	2850	26.4	2860	26.3	4	<u>1368</u>	<u>27.5</u>	1374	27.4	1362	27.6
444.namd	8	<u>540</u>	<u>119</u>	540	119	541	119	8	538	119	537	119	<u>537</u>	<u>119</u>
447.dealII	8	<u>746</u>	<u>123</u>	747	123	740	124	8	731	125	<u>728</u>	<u>126</u>	726	126
450.soplex	8	1812	36.8	<u>1812</u>	<u>36.8</u>	1814	36.8	8	1618	41.2	<u>1620</u>	<u>41.2</u>	1620	41.2
453.povray	8	222	192	222	192	<u>222</u>	<u>192</u>	8	189	225	191	222	<u>190</u>	<u>225</u>
454.calculix	8	593	111	<u>600</u>	<u>110</u>	600	110	8	427	155	<u>432</u>	<u>153</u>	432	153
459.GemsFDTD	8	<u>3068</u>	<u>27.7</u>	3069	27.7	3061	27.7	8	3089	27.5	<u>3084</u>	<u>27.5</u>	3081	27.5
465.tonto	8	699	113	<u>698</u>	<u>113</u>	696	113	8	<u>685</u>	<u>115</u>	685	115	684	115
470.lbm	8	4159	26.4	<u>4155</u>	<u>26.5</u>	4154	26.5	4	<u>1446</u>	<u>38.0</u>	1445	38.0	1448	37.9
481.wrf	8	1776	50.3	1784	50.1	<u>1777</u>	<u>50.3</u>	8	1790	49.9	<u>1778</u>	<u>50.3</u>	1774	50.4
482.sphinx3	8	2267	68.8	2272	68.6	<u>2268</u>	<u>68.8</u>	4	817	95.5	830	93.9	<u>818</u>	<u>95.3</u>

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

Continued on next page



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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

Continued on next page



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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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