



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]_rate2006 = 52.9

PowerEdge M600 (Intel Xeon L5240, 3.00GHz)

SPECfp_rate_base2006 = 48.6

CPU2006 license: 55

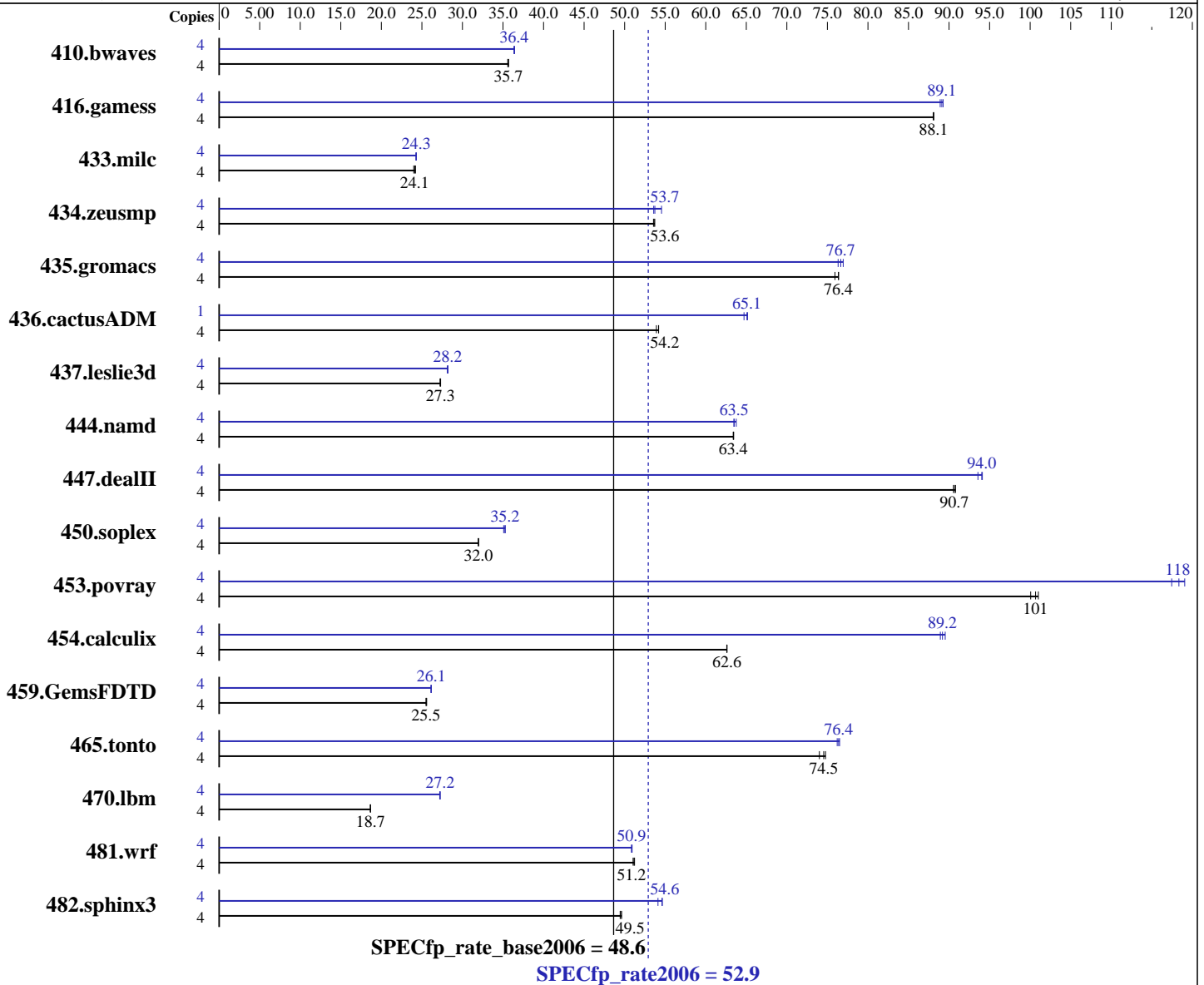
Test date: Aug-2008

Test sponsor: Dell Inc.

Hardware Availability: May-2008

Tested by: Dell Inc.

Software Availability: May-2008



Hardware

CPU Name: Intel Xeon L5240
 CPU Characteristics:
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip

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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 20080312 Package ID: l_cc_p_10.1.015, l_fc_p_10.1.015
 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 (4x4 GB 667 MHz ECC CL5 FB-DIMM)
Disk Subsystem: 1 x 80 GB 5400 RPM SATA
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1528	35.6	<u>1525</u>	<u>35.7</u>	1523	35.7	4	1493	36.4	1495	36.4	<u>1493</u>	<u>36.4</u>
416.gamess	4	<u>889</u>	<u>88.1</u>	889	88.1	889	88.1	4	881	88.9	877	89.3	<u>879</u>	<u>89.1</u>
433.milc	4	1531	24.0	<u>1523</u>	<u>24.1</u>	1517	24.2	4	1510	24.3	<u>1511</u>	<u>24.3</u>	1514	24.3
434.zeusmp	4	680	53.6	678	53.7	<u>679</u>	<u>53.6</u>	4	679	53.6	<u>678</u>	<u>53.7</u>	667	54.6
435.gromacs	4	374	76.4	<u>374</u>	<u>76.4</u>	376	75.9	4	<u>373</u>	<u>76.7</u>	374	76.3	371	76.9
436.cactusADM	4	887	53.9	<u>882</u>	<u>54.2</u>	882	54.2	1	<u>184</u>	<u>65.1</u>	183	65.2	185	64.7
437.leslie3d	4	1381	27.2	<u>1378</u>	<u>27.3</u>	1377	27.3	4	1336	28.1	<u>1335</u>	<u>28.2</u>	1333	28.2
444.namd	4	506	63.4	<u>506</u>	<u>63.4</u>	506	63.4	4	503	63.8	<u>505</u>	<u>63.5</u>	505	63.5
447.dealII	4	505	90.6	504	90.8	<u>505</u>	<u>90.7</u>	4	489	93.6	<u>487</u>	<u>94.0</u>	486	94.1
450.soplex	4	1043	32.0	1044	32.0	<u>1044</u>	<u>32.0</u>	4	<u>947</u>	<u>35.2</u>	951	35.1	946	35.3
453.povray	4	213	100	<u>211</u>	<u>101</u>	211	101	4	181	117	<u>180</u>	<u>118</u>	179	119
454.calculix	4	527	62.6	<u>527</u>	<u>62.6</u>	527	62.6	4	<u>370</u>	<u>89.2</u>	371	88.9	369	89.5
459.GemsFDTD	4	<u>1663</u>	<u>25.5</u>	1658	25.6	1663	25.5	4	1625	26.1	1622	26.2	<u>1623</u>	<u>26.1</u>
465.tonto	4	526	74.8	532	74.0	<u>528</u>	<u>74.5</u>	4	516	76.2	<u>515</u>	<u>76.4</u>	514	76.5
470.lbm	4	2948	18.6	2945	18.7	<u>2945</u>	<u>18.7</u>	4	2021	27.2	<u>2017</u>	<u>27.2</u>	2017	27.3
481.wrf	4	872	51.2	875	51.0	<u>874</u>	<u>51.2</u>	4	877	50.9	<u>878</u>	<u>50.9</u>	879	50.9
482.sphinx3	4	1577	49.4	1571	49.6	<u>1574</u>	<u>49.5</u>	4	<u>1428</u>	<u>54.6</u>	1441	54.1	1427	54.6

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

Submit Notes

The config file option 'submit' was used.

Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

Platform Notes

BIOS Settings:

Adjacent Cache Line Prefetch = Disabled (default Enabled)

Hardware Prefetcher = Disabled (default Enabled)



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General Notes

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
taskset was used to bind processes to cores except
for 436.cactusADM peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M

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

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Base Optimization Flags (Continued)

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

Peak Compiler Invocation

C benchmarks (except as noted below):

/opt/intel/cc/10.1.015/bin/icc -L/opt/intel/cc/10.1.015/lib
-I/opt/intel/cc/10.1.015/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/cc/10.1.015/bin/icpc -L/opt/intel/cc/10.1.015/lib
-I/opt/intel/cc/10.1.015/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/fc/10.1.015/bin/ifort -L/opt/intel/fc/10.1.015/lib
-I/opt/intel/fc/10.1.015/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

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Peak Portability Flags (Continued)

465.tonto: -DSPEC_CPU_LP64

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

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:

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Peak Optimization Flags (Continued)

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

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

481.wrf: -fast -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revD.20090713.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revD.20090713.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.xml>

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