



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®_rate2006 = 31.6

PowerEdge 840 (Intel Xeon X3210, 2.13 GHz)

SPECfp_rate_base2006 = 30.8

CPU2006 license: 55

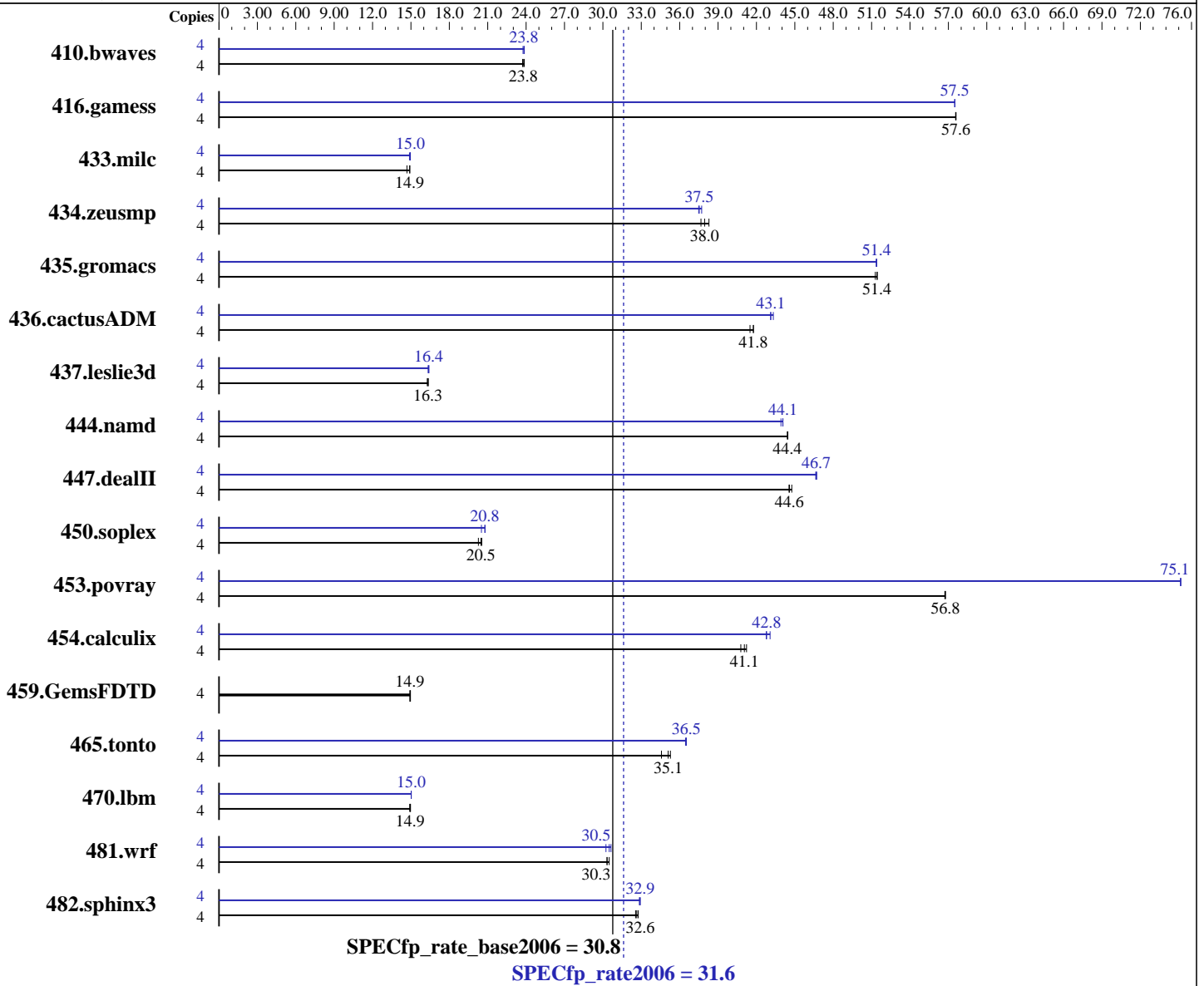
Test date: Jan-2007

Test sponsor: Dell Inc.

Hardware Availability: Jan-2007

Tested by: Dell Inc.

Software Availability: Oct-2006



Hardware

CPU Name: Intel Xeon X3210
 CPU Characteristics: 1066MHz system bus
 CPU MHz: 2133
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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Software

Operating System: Windows Server 2003 Enterprise x64 Edition
 Compiler: Intel C++ Compiler 9.1 for EM64T (20060925Z)
 Intel FORTRAN Compiler 9.1 for EM64T (20060925Z)
 Microsoft Visual Studio 2005 (8.0.50727.42)
 Auto Parallel: No
 File System: NTFS
 System State: Default
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB 533MHz ECC DDR2 SDRAM)
Disk Subsystem: 1 x 73GB SAS 10000 RPM
Other Hardware: None

Other Software: MicroQuill SmartHeap Library 8.0

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	4	2278	23.9	2291	23.7	<u>2287</u>	<u>23.8</u>	4	2288	23.8	<u>2282</u>	<u>23.8</u>	2278	23.9		
416.gamess	4	1361	57.6	1360	57.6	<u>1360</u>	<u>57.6</u>	4	1362	57.5	<u>1362</u>	<u>57.5</u>	1362	57.5		
433.milc	4	2500	14.7	2463	14.9	<u>2464</u>	<u>14.9</u>	4	2467	14.9	2455	15.0	<u>2456</u>	<u>15.0</u>		
434.zeusmp	4	966	37.7	<u>959</u>	<u>38.0</u>	951	38.3	4	965	37.7	<u>970</u>	<u>37.5</u>	971	37.5		
435.gromacs	4	557	51.3	<u>555</u>	<u>51.4</u>	555	51.4	4	556	51.4	<u>556</u>	<u>51.4</u>	556	51.4		
436.cactusADM	4	1152	41.5	<u>1145</u>	<u>41.8</u>	1144	41.8	4	<u>1108</u>	<u>43.1</u>	1103	43.3	1109	43.1		
437.leslie3d	4	2310	16.3	2299	16.4	<u>2302</u>	<u>16.3</u>	4	2301	16.3	<u>2293</u>	<u>16.4</u>	2293	16.4		
444.namd	4	<u>722</u>	<u>44.4</u>	722	44.4	722	44.5	4	730	43.9	728	44.1	<u>728</u>	<u>44.1</u>		
447.dealII	4	<u>1026</u>	<u>44.6</u>	1022	44.8	1027	44.5	4	<u>980</u>	<u>46.7</u>	981	46.6	980	46.7		
450.soplex	4	1646	20.3	<u>1630</u>	<u>20.5</u>	1625	20.5	4	1627	20.5	<u>1606</u>	<u>20.8</u>	1605	20.8		
453.povray	4	<u>375</u>	<u>56.8</u>	375	56.8	375	56.7	4	283	75.2	<u>283</u>	<u>75.1</u>	283	75.1		
454.calculix	4	800	41.2	<u>804</u>	<u>41.1</u>	809	40.8	4	<u>771</u>	<u>42.8</u>	772	42.8	766	43.1		
459.GemsFDTD	4	2836	15.0	2843	14.9	<u>2843</u>	<u>14.9</u>	4	2836	15.0	2843	14.9	<u>2843</u>	<u>14.9</u>		
465.tonto	4	<u>1121</u>	<u>35.1</u>	1138	34.6	1116	35.3	4	1080	36.5	1078	36.5	<u>1078</u>	<u>36.5</u>		
470.lbm	4	<u>3676</u>	<u>14.9</u>	3688	14.9	3672	15.0	4	3659	15.0	<u>3659</u>	<u>15.0</u>	3659	15.0		
481.wrf	4	1465	30.5	1474	30.3	<u>1473</u>	<u>30.3</u>	4	1477	30.2	<u>1465</u>	<u>30.5</u>	1459	30.6		
482.sphinx3	4	2395	32.6	<u>2388</u>	<u>32.6</u>	2380	32.8	4	2373	32.9	2368	32.9	<u>2371</u>	<u>32.9</u>		

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

General Notes

Adjacent Sector Prefetch disabled in BIOS, default enabled
Binaries were built on Windows XP Professional x64 Edition

Base Compiler Invocation

C benchmarks:
icl -Qc99

C++ benchmarks:
icl

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Base Compiler Invocation (Continued)

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qc99 ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_P64
 416.gamess: -DSPEC_CPU_P64
 433.milc: -D_Complex= -DSPEC_CPU_P64
 434.zeusmp: -DSPEC_CPU_P64
 435.gromacs: -D_Complex= -DSPEC_CPU_P64
 436.cactusADM: -D_Complex= -DSPEC_CPU_P64 -Qlowercase /assume:underscore
 437.leslie3d: -DSPEC_CPU_P64
 444.namd: -DSPEC_CPU_P64 /TP
 447.dealII: -D_Complex= -DSPEC_CPU_P64 -DBOOST_NO_INTRINSIC_WCHAR_T
 -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
 450.soplex: -DSPEC_CPU_P64
 453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
 454.calculix: -D_Complex= -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER
 -Qlowercase
 459.GemsFDTD: -DSPEC_CPU_P64
 465.tonto: -DSPEC_CPU_P64
 470.lbm: -D_Complex= -DSPEC_CPU_P64
 481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
 482.sphinx3: -D_Complex= -DSPEC_CPU_P64

Base Optimization Flags

C benchmarks:

-fast /F950000000 shlw64M.lib -link /FORCE:MULTIPLE

C++ benchmarks:

-fast -Qcxx_features /F950000000 shlw64M.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:

-fast /F950000000 -link /FORCE:MULTIPLE

Benchmarks using both Fortran and C:

-fast /F950000000 -link /FORCE:MULTIPLE



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Peak Compiler Invocation

C benchmarks:

icl -Qc99

C++ benchmarks:

icl

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qc99 ifort

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto_ilp32
/F950000000 shlW64M.lib -link /FORCE:MULTIPLE

C++ benchmarks:

ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto_ilp32
-Qcxx_features /F950000000 shlW64M.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast
-Qauto_ilp32 /F950000000 -link /FORCE:MULTIPLE

416.gamess: ONESTEP -fast -Qauto_ilp32 /F950000000
-link /FORCE:MULTIPLE

434.zeusmp: Same as 410.bwaves

437.leslie3d: Same as 410.bwaves

459.GemsFDTD: basepeak = yes

465.tonto: Same as 410.bwaves

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

435.gromacs: -fast -Qauto_ilp32 /F950000000
-link /FORCE:MULTIPLE

436.cactusADM: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto_ilp32
/F950000000 -link /FORCE:MULTIPLE

454.calculix: Same as 436.cactusADM

481.wrf: Same as 435.gromacs

The flags file that was used to format this result can be browsed at
<http://www.spec.org/cpu2006/flags/dell.cpu2006.ic91.x64.flags.html>

You can also download the XML flags source by saving the following link:
<http://www.spec.org/cpu2006/flags/dell.cpu2006.ic91.x64.flags.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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