SPEC® CFP2006 Result

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Dell Inc.

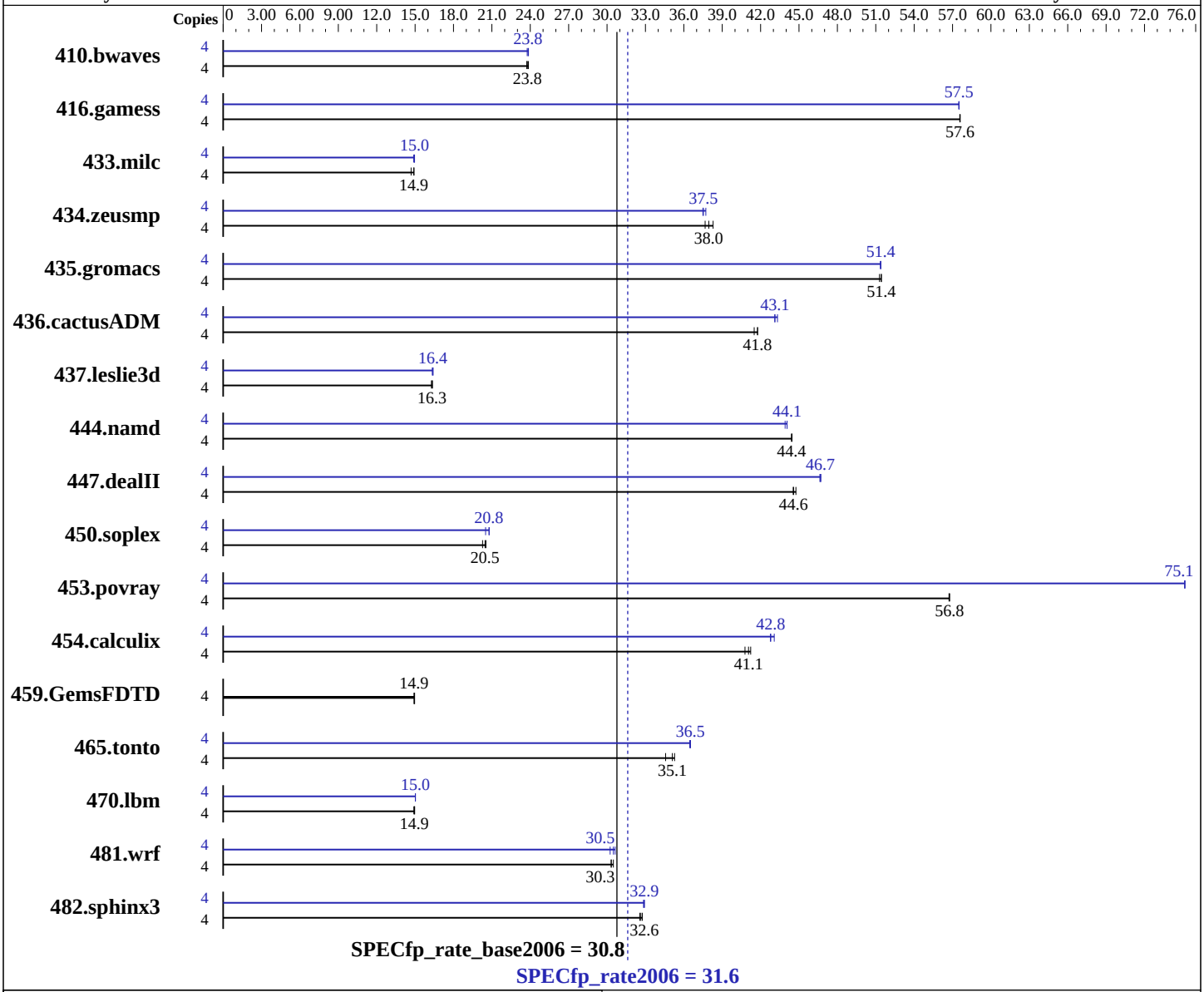
PowerEdge 840 (Intel Xeon X3210, 2.13 GHz)

SPECfp®_rate2006 = 31.6

SPECfp_rate_base2006 = 30.8

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Jan-2007
Hardware Availability: Jan-2007
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	**2287**	**23.8**	4	2288	23.8	**2282**	**23.8**	2278	23.9
416.gamess	4	1361	57.6	1360	57.6	**1360**	**57.6**	4	1362	57.5	**1362**	**57.5**	1362	57.5
433.milc	4	2500	14.7	2463	14.9	**2464**	**14.9**	4	2467	14.9	2455	15.0	**2456**	**15.0**
434.zeusmp	4	966	37.7	**959**	**38.0**	951	38.3	4	965	37.7	**970**	**37.5**	971	37.5
435.gromacs	4	557	51.3	**555**	**51.4**	555	51.4	4	556	51.4	**556**	**51.4**	556	51.4
436.cactusADM	4	1152	41.5	**1145**	**41.8**	1144	41.8	4	**1108**	**43.1**	1103	43.3	1109	43.1
437.leslie3d	4	2310	16.3	2299	16.4	**2302**	**16.3**	4	2301	16.3	**2293**	**16.4**	2293	16.4
444.namd	4	**722**	**44.4**	722	44.4	722	44.5	4	730	43.9	728	44.1	**728**	**44.1**
447.dealII	4	**1026**	**44.6**	1022	44.8	1027	44.5	4	**980**	**46.7**	981	46.6	980	46.7
450.soplex	4	1646	20.3	**1630**	**20.5**	1625	20.5	4	1627	20.5	**1606**	**20.8**	1605	20.8
453.povray	4	**375**	**56.8**	375	56.8	375	56.7	4	283	75.2	**283**	**75.1**	283	75.1
454.calculix	4	800	41.2	**804**	**41.1**	809	40.8	4	**771**	**42.8**	772	42.8	766	43.1
459.GemsFDTD	4	2836	15.0	2843	14.9	**2843**	**14.9**	4	2836	15.0	2843	14.9	**2843**	**14.9**
465.tonto	4	**1121**	**35.1**	1138	34.6	1116	35.3	4	1080	36.5	1078	36.5	**1078**	**36.5**
470.lbm	4	**3676**	**14.9**	3688	14.9	3672	15.0	4	3659	15.0	**3659**	**15.0**	3659	15.0
481.wrf	4	1465	30.5	1474	30.3	**1473**	**30.3**	4	1477	30.2	**1465**	**30.5**	1459	30.6
482.sphinx3	4	2395	32.6	**2388**	**32.6**	2380	32.8	4	2373	32.9	2368	32.9	**2371**	**32.9**

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
```

Continued on next page

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

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:

Continued on next page

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 other inquiries, please contact webmaster@spec.org.

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