SPEC® CFP2006 Result

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Dell Inc.

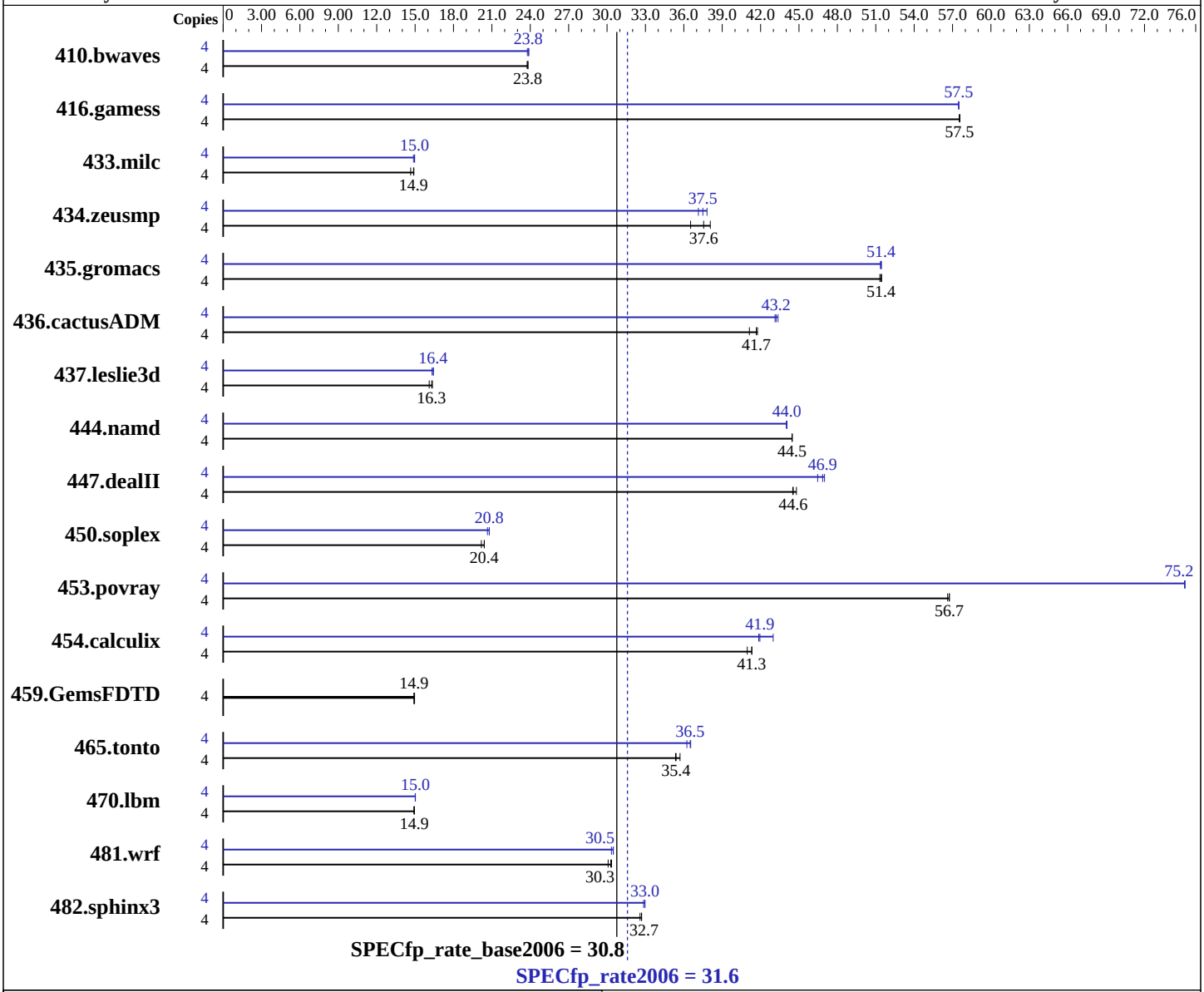
PowerEdge 860 (Intel Xeon X3210, 2.13 GHz)

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	2282	23.8	**2283**	**23.8**	2289	23.8	4	2287	23.8	**2280**	**23.8**	2275	23.9
416.gamess	4	**1361**	**57.5**	1360	57.6	1361	57.5	4	1363	57.5	1362	57.5	**1363**	**57.5**
433.milc	4	2506	14.7	2464	14.9	**2468**	**14.9**	4	2469	14.9	**2455**	**15.0**	2454	15.0
434.zeusmp	4	996	36.5	956	38.1	**969**	**37.6**	4	**971**	**37.5**	980	37.1	963	37.8
435.gromacs	4	557	51.3	**555**	**51.4**	555	51.5	4	556	51.4	**556**	**51.4**	555	51.4
436.cactusADM	4	1162	41.1	1145	41.8	**1147**	**41.7**	4	**1106**	**43.2**	1102	43.4	1108	43.1
437.leslie3d	4	2335	16.1	2299	16.4	**2308**	**16.3**	4	2303	16.3	2288	16.4	**2290**	**16.4**
444.namd	4	722	44.5	721	44.5	**721**	**44.5**	4	729	44.0	728	44.1	**728**	**44.0**
447.dealII	4	1021	44.8	1028	44.5	**1027**	**44.6**	4	**977**	**46.9**	985	46.5	974	47.0
450.soplex	4	1653	20.2	1635	20.4	**1635**	**20.4**	4	1615	20.7	1604	20.8	**1605**	**20.8**
453.povray	4	376	56.6	**375**	**56.7**	375	56.8	4	**283**	**75.2**	283	75.2	283	75.1
454.calculix	4	799	41.3	806	41.0	**799**	**41.3**	4	768	43.0	**787**	**41.9**	788	41.9
459.GemsFDTD	4	2837	15.0	2845	14.9	**2844**	**14.9**	4	2837	15.0	2845	14.9	**2844**	**14.9**
465.tonto	4	**1112**	**35.4**	1102	35.7	1113	35.4	4	1086	36.2	**1078**	**36.5**	1077	36.5
470.lbm	4	3688	14.9	**3677**	**14.9**	3677	14.9	4	3658	15.0	**3659**	**15.0**	3662	15.0
481.wrf	4	1485	30.1	**1475**	**30.3**	1472	30.4	4	1473	30.3	1465	30.5	**1466**	**30.5**
482.sphinx3	4	2393	32.6	2384	32.7	**2384**	**32.7**	4	2373	32.9	2365	33.0	**2366**	**33.0**

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

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