SPEC® CFP2006 Result

Dell Inc.

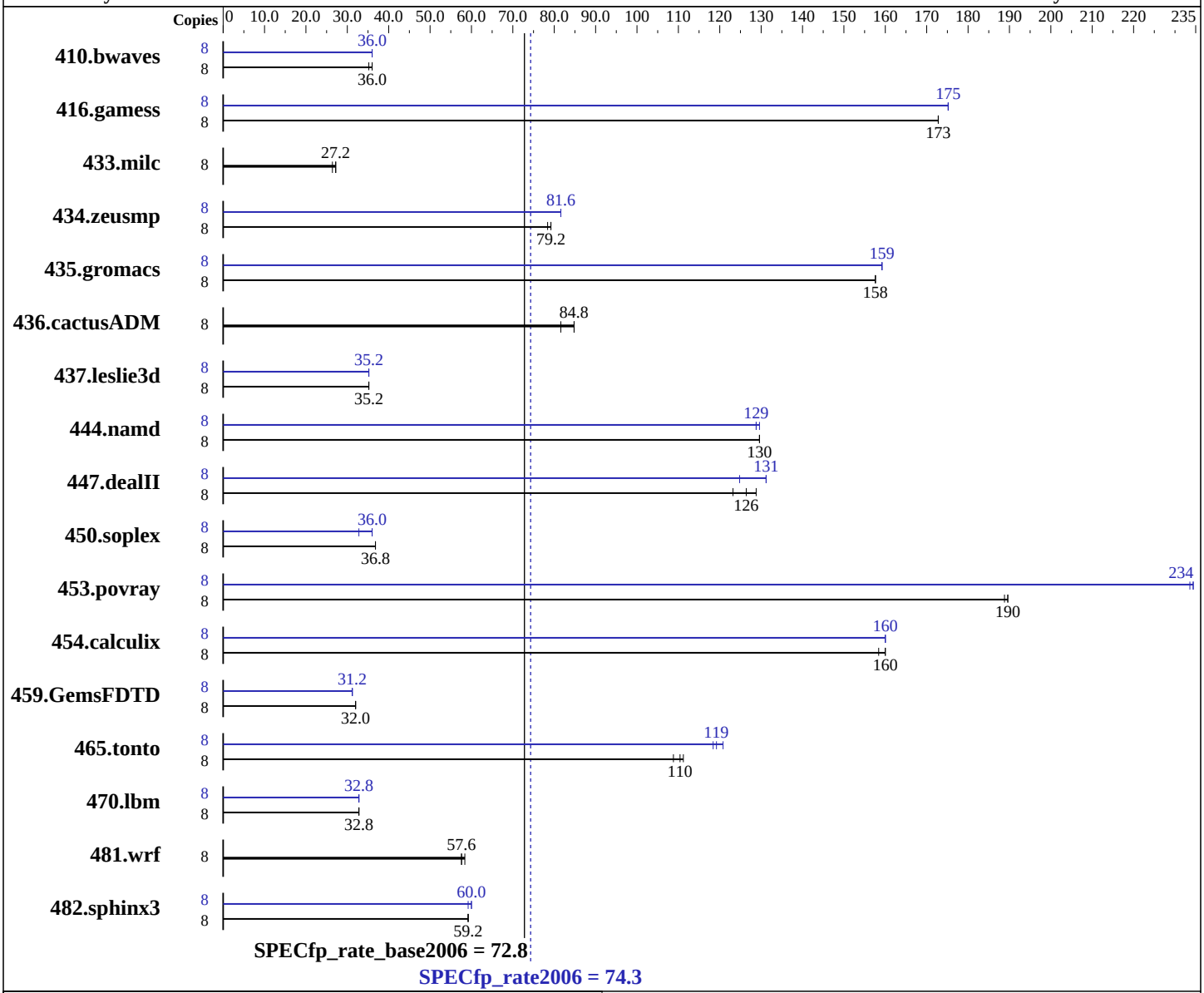
Dell Precision R5400 (Intel Xeon E5450, 3.00 GHz)

SPECfp®_rate2006 = 74.3

SPECfp_rate_base2006 = 72.8

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

Test date: Dec-2008
Hardware Availability: Oct-2008
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Xeon E5450
CPU Characteristics:	1333 MHz Bus Speed
CPU MHz:	3000
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

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Software

Operating System:	Windows Vista Business SP1 (64-bit)
Compiler:	Intel C++ Compiler for Intel 64, Version 11.0 Build 20080930 Package ID: w_cproc_p_11.0.061 Intel Visual Fortran Compiler for Intel 64, Version 11.0 Build 20080930 Package ID: w_cprof_p_11.0.061 Microsoft Visual Studio 2008 SP1
Auto Parallel:	No
File System:	NTFS

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB DDR2-667 FB-DIMM, CL5)
Disk Subsystem: 1 x 320 GB SATA 7200 RPM
Other Hardware: None

System State: Default
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: MicroQuill SmartHeap Library 8.1 for x64

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3062	35.2	**3009**	**36.0**	3008	36.0	8	**3009**	**36.0**	3009	36.0	3007	36.0
416.gamess	8	906	173	907	173	**906**	**173**	8	894	175	895	175	**895**	**175**
433.milc	8	2716	27.2	**2728**	**27.2**	2743	26.4	8	2716	27.2	**2728**	**27.2**	2743	26.4
434.zeusmp	8	**921**	**79.2**	928	78.4	918	79.2	8	892	81.6	**892**	**81.6**	893	81.6
435.gromacs	8	363	158	362	158	**362**	**158**	8	359	159	**359**	**159**	359	159
436.cactusADM	8	1172	81.6	1131	84.8	**1132**	**84.8**	8	1172	81.6	1131	84.8	**1132**	**84.8**
437.leslie3d	8	2125	35.2	**2124**	**35.2**	2119	35.2	8	2143	35.2	**2143**	**35.2**	2145	35.2
444.namd	8	494	130	**494**	**130**	495	130	8	500	129	496	130	**497**	**129**
447.dealII	8	742	123	**724**	**126**	710	129	8	733	125	697	131	**698**	**131**
450.soplex	8	**1817**	**36.8**	1817	36.8	1824	36.8	8	2040	32.8	**1852**	**36.0**	1835	36.0
453.povray	8	**225**	**190**	225	189	225	190	8	**182**	**234**	183	234	182	234
454.calculix	8	**413**	**160**	412	160	417	158	8	**413**	**160**	413	160	413	160
459.GemsFDTD	8	2669	32.0	**2652**	**32.0**	2646	32.0	8	**2732**	**31.2**	2723	31.2	2740	31.2
465.tonto	8	706	111	**711**	**110**	723	109	8	663	118	652	121	**661**	**119**
470.lbm	8	3332	32.8	**3333**	**32.8**	3333	32.8	8	3338	32.8	3323	32.8	**3324**	**32.8**
481.wrf	8	1539	58.4	1544	57.6	**1541**	**57.6**	8	1539	58.4	1544	57.6	**1541**	**57.6**
482.sphinx3	8	2626	59.2	**2624**	**59.2**	2619	59.2	8	2624	59.2	2614	60.0	**2615**	**60.0**

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

General Notes

```
Binaries were built on Windows Vista Ultimate (64-bit)
```

Base Compiler Invocation

C benchmarks:

```
icl -Qvc9 -Qstd=c99
```

C++ benchmarks:

```
icl -Qvc9
```

Fortran benchmarks:

```
ifort
```

Continued on next page

Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
icl -Qvc9 -Qstd=c99 ifort

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch
/F512000000

C++ benchmarks:
-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch
-Qcxx_features /F512000000 shlw64m.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch
/F1000000000

Benchmarks using both Fortran and C:
-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch
/F1000000000

Peak Compiler Invocation

C benchmarks:
```
icl -Qvc9 -Qstd=c99
```

C++ benchmarks:
```
icl -Qvc9
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc9 -Qstd=c99 ifort
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

433.milc: `basepeak = yes`

470.lbm: `-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000`

482.sphinx3: `-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qunroll2 /F512000000`

C++ benchmarks:

444.namd: `-Qprof_gen`(pass 1) `-QxSSE4.1`(pass 2) `-Qauto-ilp32`(pass 2) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Oa /F512000000 shlw64m.lib -link /FORCE:MULTIPLE`

447.dealII: `-Qprof_gen`(pass 1) `-QxSSE4.1`(pass 2) `-Qauto-ilp32`(pass 2) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qscalar-rep- /F512000000 shlw64m.lib -link /FORCE:MULTIPLE`

450.soplex: `-Qprof_gen`(pass 1) `-QxSSE4.1 -Qauto-ilp32` `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- /F512000000 shlw64m.lib -link /FORCE:MULTIPLE`

453.povray: `-Qprof_gen`(pass 1) `-QxSSE4.1`(pass 2) `-Qauto-ilp32`(pass 2) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F512000000 shlw64m.lib -link /FORCE:MULTIPLE`

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Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: -QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

416.gamess: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep- /F1000000000

434.zeusmp: -Qprof_gen(pass 1) -QxSSE4.1 -Qauto-ilp32 -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- /F1000000000

437.leslie3d: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

459.GemsFDTD: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qopt-prefetch /F1000000000

465.tonto: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000

Benchmarks using both Fortran and C:

435.gromacs: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

436.cactusADM: basepeak = yes

454.calculix: -QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- /F1000000000

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/dell.ic11.0.windows.flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/dell.ic11.0.windows.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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