SPEC® CFP2006 Result

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Dell Inc.

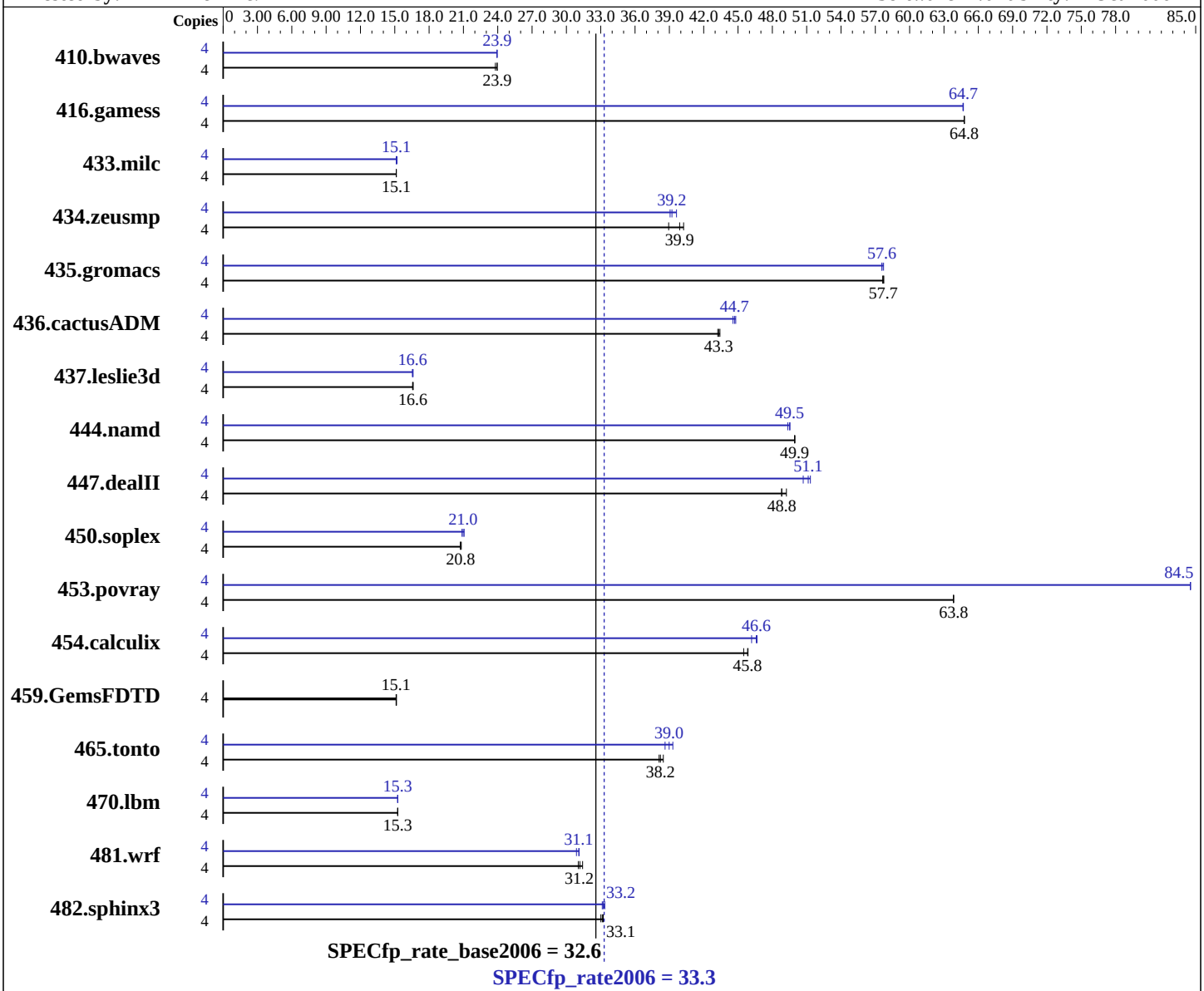
PowerEdge 840 (Intel Xeon X3220, 2.40 GHz)

SPECfp®_rate2006 = 33.3

SPECfp_rate_base2006 = 32.6

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 X3220
CPU Characteristics:	1066MHz system bus
CPU MHz:	2400
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) MicroQuill SmartHeap Library 8.0 for x64
Auto Parallel:	No
File System:	NTFS
System State:	Default
Base Pointers:	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

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	2285	23.8	2269	24.0	**2270**	**23.9**	4	**2270**	**23.9**	2272	23.9	2270	23.9
416.gamess	4	**1209**	**64.8**	1209	64.8	1209	64.8	4	1211	64.7	1211	64.7	**1211**	**64.7**
433.milc	4	2426	15.1	**2426**	**15.1**	2428	15.1	4	**2427**	**15.1**	2428	15.1	2416	15.2
434.zeusmp	4	904	40.2	935	38.9	**912**	**39.9**	4	**928**	**39.2**	932	39.1	919	39.6
435.gromacs	4	495	57.6	495	57.7	**495**	**57.7**	4	496	57.6	**496**	**57.6**	495	57.7
436.cactusADM	4	1106	43.2	1101	43.4	**1104**	**43.3**	4	1073	44.6	1067	44.8	**1069**	**44.7**
437.leslie3d	4	2264	16.6	**2267**	**16.6**	2271	16.6	4	2273	16.5	**2269**	**16.6**	2265	16.6
444.namd	4	**642**	**49.9**	642	50.0	642	49.9	4	650	49.4	648	49.5	**648**	**49.5**
447.dealII	4	938	48.8	**937**	**48.8**	930	49.2	4	892	51.3	903	50.7	**895**	**51.1**
450.soplex	4	**1607**	**20.8**	1610	20.7	1603	20.8	4	1598	20.9	1584	21.1	**1590**	**21.0**
453.povray	4	**333**	**63.8**	333	63.8	333	63.8	4	**252**	**84.5**	252	84.5	252	84.5
454.calculix	4	**720**	**45.8**	719	45.9	725	45.5	4	707	46.7	**708**	**46.6**	714	46.2
459.GemsFDTD	4	**2806**	**15.1**	2801	15.2	2808	15.1	4	**2806**	**15.1**	2801	15.2	2808	15.1
465.tonto	4	1033	38.1	1023	38.5	**1030**	**38.2**	4	1019	38.6	1001	39.3	**1010**	**39.0**
470.lbm	4	**3602**	**15.3**	3602	15.3	3601	15.3	4	**3602**	**15.3**	3605	15.2	3600	15.3
481.wrf	4	1440	31.0	1422	31.4	**1433**	**31.2**	4	1447	30.9	1436	31.1	**1438**	**31.1**
482.sphinx3	4	2361	33.0	**2353**	**33.1**	2347	33.2	4	2353	33.1	2337	33.4	**2346**	**33.2**

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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