SPEC® CFP2006 Result

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Dell Inc.

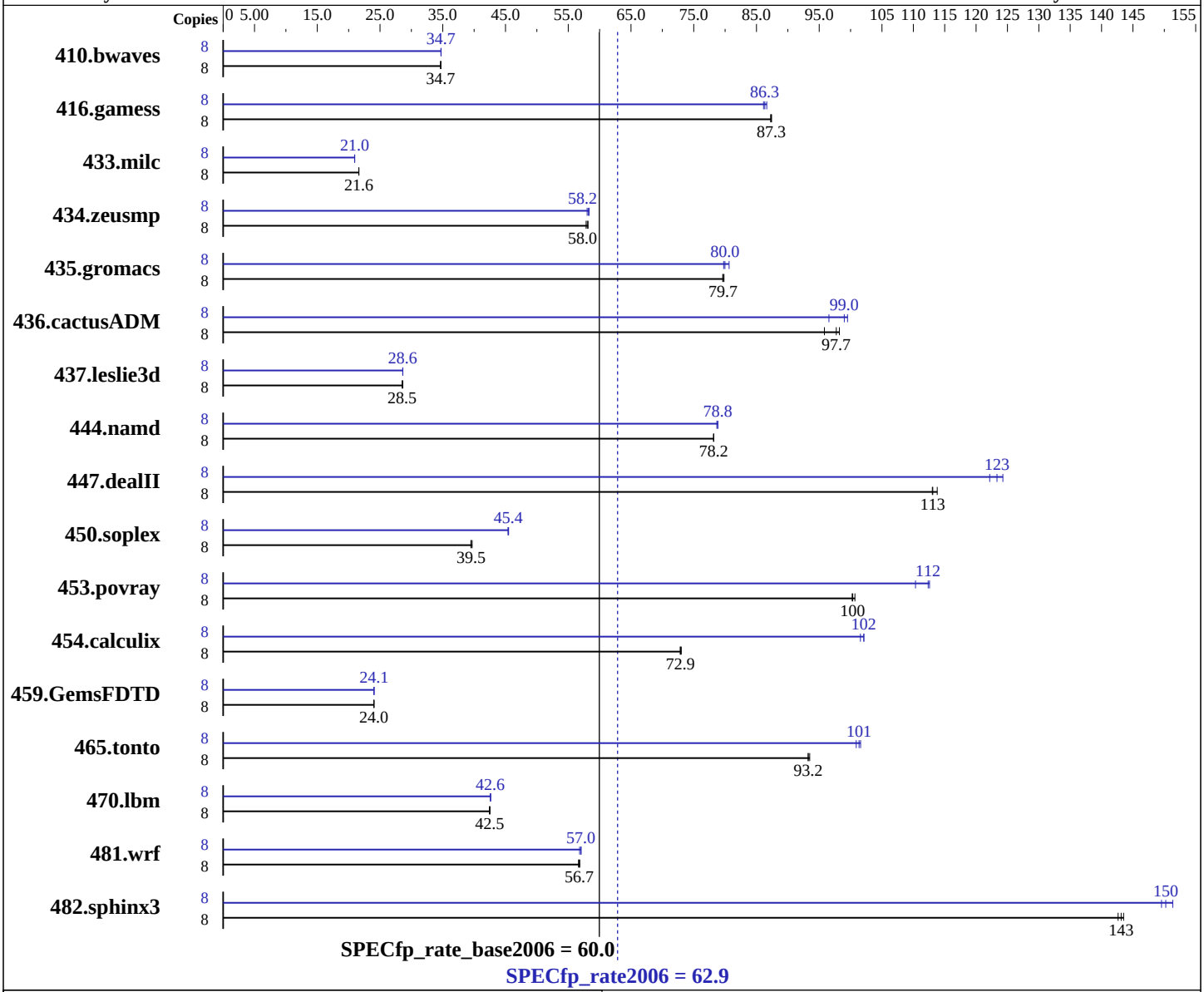
PowerEdge 6800 (Intel Xeon 7140M, 3.40 GHz)

SPECfp®_rate2006 = 62.9

SPECfp_rate_base2006 = 60.0

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

Test date: Oct-2007
Hardware Availability: Aug-2006
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon 7140M
CPU Characteristics:	800 MHz system bus
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip
CPU(s) orderable:	1,2,4 chips
Primary Cache:	12 K micro-ops I + 16 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core

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Software

Operating System:	64-Bit SUSE LINUX Enterprise Server 10 SP1
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725
Auto Parallel:	No
File System:	ReiserFS
System State:	Multi-user, run level 3
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit

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L3 Cache: 16 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (16 x 1 GB ECC 400 MHz DDR2 SDRAM)
Disk Subsystem: 2 x 36 GB SCSI 15k RPM
Other Hardware: None

Other Software: SmartHeap library V8.1

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3138	34.6	3134	34.7	**3136**	**34.7**	8	3132	34.7	**3131**	**34.7**	3129	34.7
416.gamess	8	1792	87.4	**1793**	**87.3**	1795	87.3	8	1819	86.1	**1814**	**86.3**	1808	86.6
433.milc	8	3395	21.6	**3396**	**21.6**	3397	21.6	8	**3503**	**21.0**	3506	20.9	3502	21.0
434.zeusmp	8	1252	58.2	1259	57.8	**1255**	**58.0**	8	1255	58.0	**1251**	**58.2**	1248	58.3
435.gromacs	8	716	79.8	**717**	**79.7**	717	79.6	8	708	80.6	716	79.8	**714**	**80.0**
436.cactusADM	8	998	95.8	973	98.2	**978**	**97.7**	8	961	99.5	990	96.5	**966**	**99.0**
437.leslie3d	8	2626	28.6	**2635**	**28.5**	2635	28.5	8	**2626**	**28.6**	2627	28.6	2626	28.6
444.namd	8	821	78.1	820	78.2	**821**	**78.2**	8	814	78.9	**814**	**78.8**	815	78.7
447.dealII	8	804	114	**809**	**113**	810	113	8	736	124	**742**	**123**	749	122
450.soplex	8	1681	39.7	1690	39.5	**1688**	**39.5**	8	1469	45.4	1466	45.5	**1469**	**45.4**
453.povray	8	425	100	423	101	**424**	**100**	8	378	113	**379**	**112**	386	110
454.calculix	8	906	72.8	**906**	**72.9**	904	73.0	8	646	102	650	102	**646**	**102**
459.GemsFDTD	8	3534	24.0	**3532**	**24.0**	3531	24.0	8	3533	24.0	**3529**	**24.1**	3529	24.1
465.tonto	8	842	93.5	**844**	**93.2**	844	93.2	8	**777**	**101**	775	102	780	101
470.lbm	8	2585	42.5	**2586**	**42.5**	2591	42.4	8	2578	42.6	**2581**	**42.6**	2581	42.6
481.wrf	8	1578	56.6	**1575**	**56.7**	1572	56.8	8	**1567**	**57.0**	1567	57.0	1573	56.8
482.sphinx3	8	1093	143	**1089**	**143**	1086	144	8	1030	151	1043	150	**1038**	**150**

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs
```

Platform Notes

```
BIOS Settings:
Logical Processor = Disabled (default Enabled)
```

Base Compiler Invocation

C benchmarks:

```
icc
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xP -ipo -O3 -no-prec-div -static

C++ benchmarks:
-xP -ipo -O3 -no-prec-div -static

Fortran benchmarks:
-xP -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:
-xP -ipo -O3 -no-prec-div -static

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: `icc`

C++ benchmarks (except as noted below):
```
icpc
```

450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc`
`-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
`-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

Fortran benchmarks (except as noted below):
```
ifort
```

437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort`
`-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
`-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

Benchmarks using both Fortran and C:
```
icc ifort
```

Peak Portability Flags

410.bwaves: `-DSPEC_CPU_LP64`
416.gamess: `-DSPEC_CPU_LP64`
433.milc: `-DSPEC_CPU_LP64`
434.zeusmp: `-DSPEC_CPU_LP64`
435.gromacs: `-DSPEC_CPU_LP64 -nofor_main`
436.cactusADM: `-DSPEC_CPU_LP64 -nofor_main`
444.namd: `-DSPEC_CPU_LP64`
447.dealII: `-DSPEC_CPU_LP64`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`
465.tonto: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

433.milc: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xP -ipo -O3`
`-no-prec-div -static -fno-alias -auto-ilp32`

Continued on next page

Peak Optimization Flags (Continued)

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -xP -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xP -ipo -O3 -no-prec-div -static -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -prefetch -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -static -unroll2 -prefetch -auto-ilp32

454.calculix: -xP -ipo -O3 -no-prec-div -static -unroll-aggressive -auto-ilp32

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Peak Optimization Flags (Continued)

481.wrf: `-xP -ipo -O3 -no-prec-div -static -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.25.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.25.xml`

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