SPEC® CFP2006 Result

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Dell Inc.

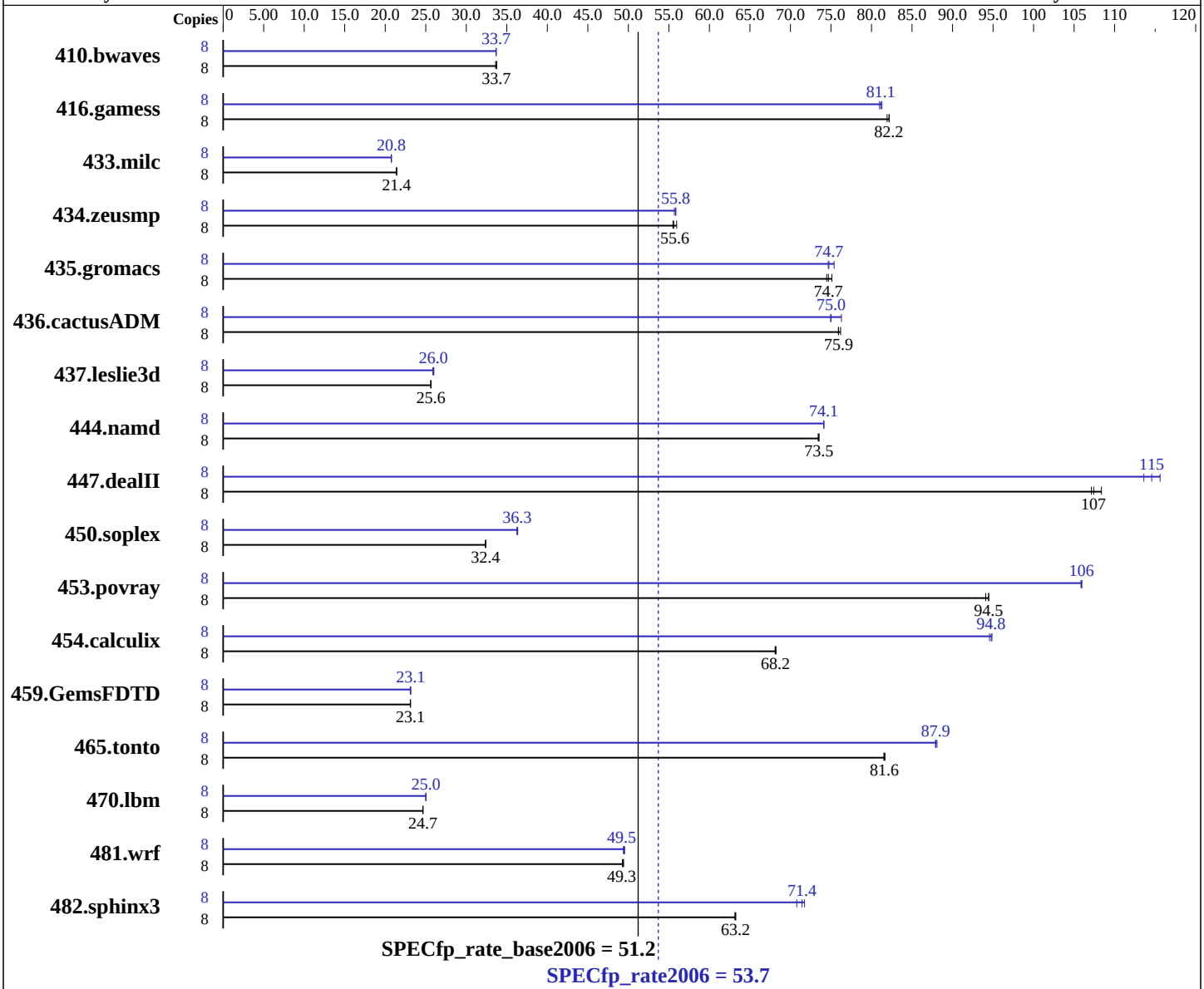
PowerEdge 6850 (Intel Xeon 7130M, 3.20 GHz)

SPECfp®_rate2006 = 53.7

SPECfp_rate_base2006 = 51.2

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

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



Hardware

CPU Name:	Intel Xeon 7130M
CPU Characteristics:	800 MHz system bus
CPU MHz:	3200
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: 8 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	**3223**	**33.7**	3234	33.6	3221	33.8	8	3229	33.7	**3227**	**33.7**	3227	33.7
416.gamess	8	1912	81.9	**1907**	**82.2**	1906	82.2	8	1934	81.0	**1930**	**81.1**	1927	81.3
433.milc	8	**3432**	**21.4**	3433	21.4	3432	21.4	8	3539	20.8	**3538**	**20.8**	3538	20.8
434.zeusmp	8	1301	56.0	**1309**	**55.6**	1312	55.5	8	1308	55.7	**1304**	**55.8**	1303	55.9
435.gromacs	8	760	75.1	**765**	**74.7**	767	74.5	8	**764**	**74.7**	758	75.4	765	74.7
436.cactusADM	8	**1259**	**75.9**	1259	75.9	1255	76.2	8	**1274**	**75.0**	1276	75.0	1253	76.3
437.leslie3d	8	2935	25.6	**2934**	**25.6**	2933	25.6	8	2892	26.0	2906	25.9	**2898**	**26.0**
444.namd	8	**873**	**73.5**	873	73.5	874	73.4	8	**866**	**74.1**	866	74.1	866	74.1
447.dealII	8	854	107	845	108	**852**	**107**	8	792	116	**799**	**115**	806	114
450.soplex	8	**2059**	**32.4**	2059	32.4	2062	32.4	8	**1840**	**36.3**	1840	36.3	1835	36.4
453.povray	8	**451**	**94.5**	452	94.1	451	94.5	8	**402**	**106**	402	106	402	106
454.calculix	8	**968**	**68.2**	967	68.2	969	68.1	8	696	94.9	**696**	**94.8**	698	94.6
459.GemsFDTD	8	3676	23.1	**3672**	**23.1**	3672	23.1	8	3677	23.1	3667	23.1	**3669**	**23.1**
465.tonto	8	**965**	**81.6**	966	81.5	964	81.7	8	894	88.1	**895**	**87.9**	896	87.9
470.lbm	8	4462	24.6	**4458**	**24.7**	4457	24.7	8	4393	25.0	4397	25.0	**4394**	**25.0**
481.wrf	8	**1811**	**49.3**	1809	49.4	1814	49.3	8	1810	49.4	1804	49.5	**1806**	**49.5**
482.sphinx3	8	2465	63.2	2469	63.1	**2466**	**63.2**	8	**2183**	**71.4**	2173	71.7	2203	70.8

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)
```

General Notes

```
This result was measured on the Dell PowerEdge 6800.
The PowerEdge 6800 and PowerEdge 6850 are electronically equivalent.
```

Base Compiler Invocation

C benchmarks:
icc

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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