



# SPEC<sup>®</sup> CFP2006 Result

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## Dell Inc.

SPECfp<sup>®</sup>\_rate2006 = 53.7

PowerEdge 6800 (Intel Xeon 7130M, 3.20 GHz)

SPECfp\_rate\_base2006 = 51.2

CPU2006 license: 55

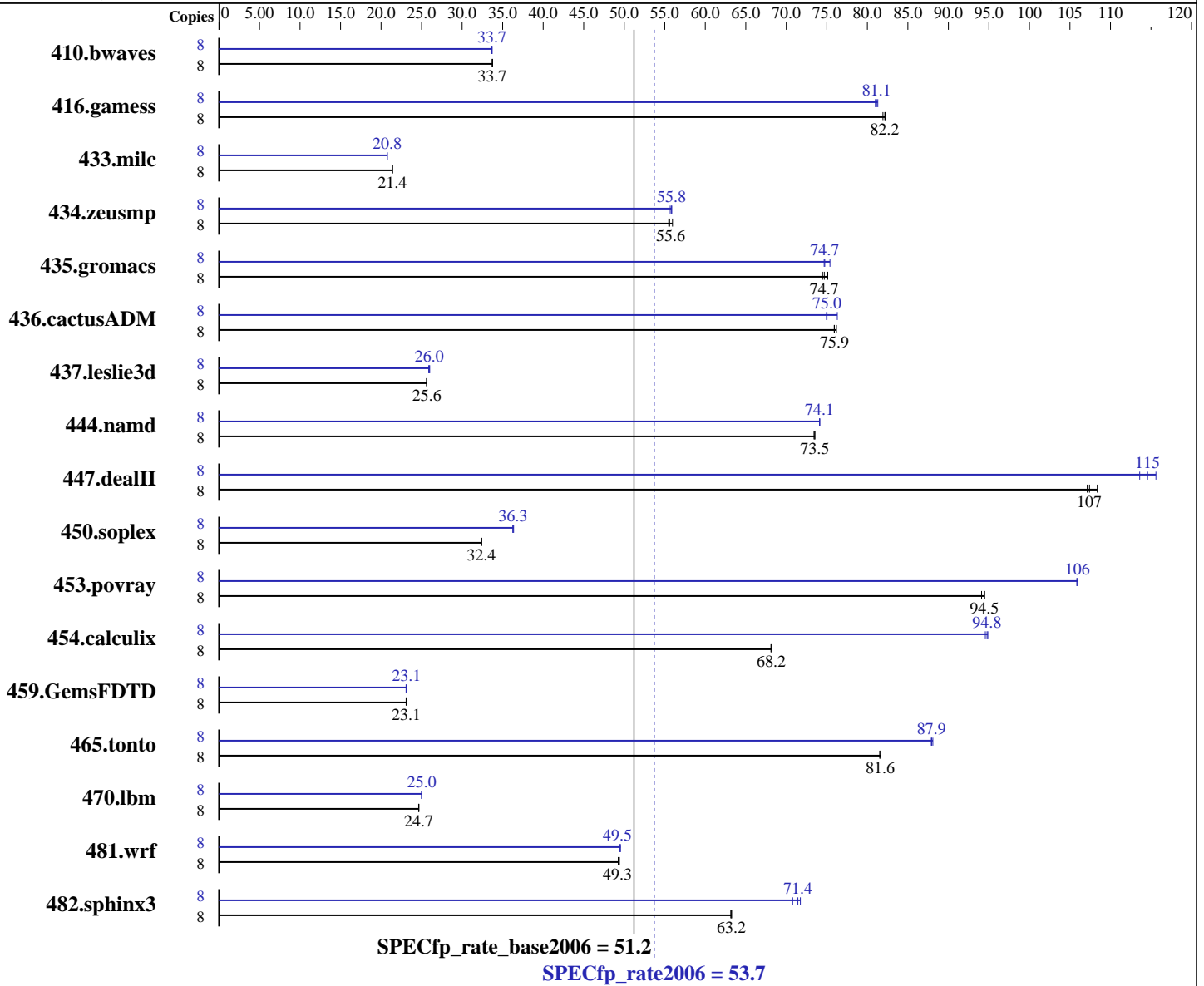
Test date: Sep-2007

Test sponsor: Dell Inc.

Hardware Availability: Aug-2006

Tested by: Dell Inc.

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

## 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



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## 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.deallI: -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
```

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## 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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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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