



# SPEC<sup>®</sup> CFP2006 Result

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Dell Inc.

SPECfp<sup>®</sup>\_rate2006 = 55.8

PowerEdge 2950 III (Intel Xeon X5260, 3.33 GHz)

SPECfp\_rate\_base2006 = 51.1

CPU2006 license: 55

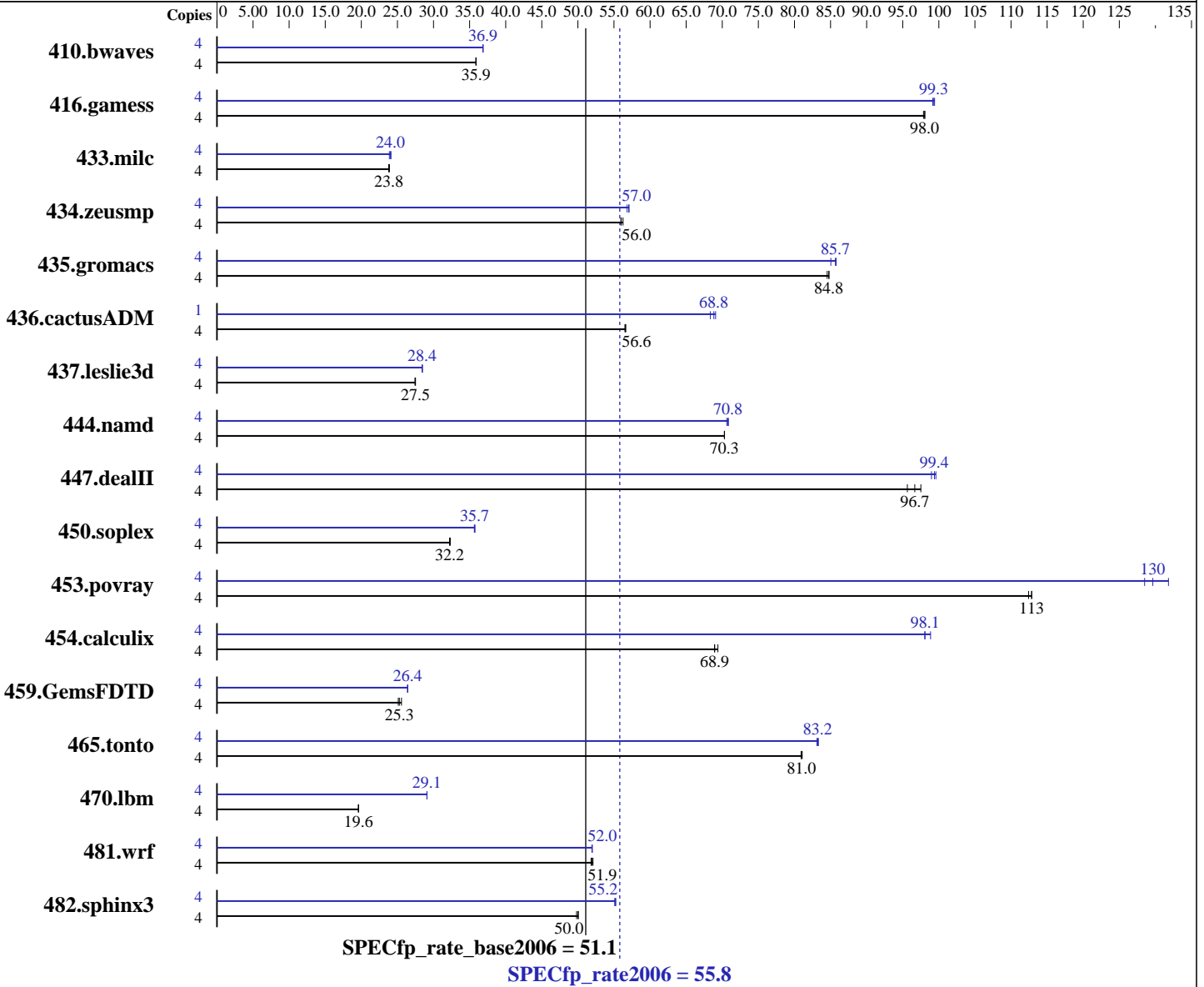
Test date: Dec-2007

Test sponsor: Dell Inc.

Hardware Availability: Jan-2008

Tested by: Dell Inc.

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5260  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 3333  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip

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### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l\_cc\_p\_10.1.008, l\_fc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, run level 3  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8x2 GB DDR2-667 ECC CL5 FB-DIMM)  
Disk Subsystem: 1 x 73 GB SAS 15k 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	1515	35.9	<u>1515</u>	<u>35.9</u>	1514	35.9	4	1475	36.9	<u>1475</u>	<u>36.9</u>	1475	36.9
416.gamess	4	800	97.9	799	98.1	<u>799</u>	<u>98.0</u>	4	790	99.2	788	99.4	<u>789</u>	<u>99.3</u>
433.milc	4	<u>1541</u>	<u>23.8</u>	1537	23.9	1543	23.8	4	1538	23.9	<u>1528</u>	<u>24.0</u>	1523	24.1
434.zeusmp	4	651	56.0	<u>650</u>	<u>56.0</u>	647	56.3	4	641	56.8	638	57.1	<u>638</u>	<u>57.0</u>
435.gromacs	4	338	84.5	337	84.8	<u>337</u>	<u>84.8</u>	4	336	85.0	333	85.8	<u>333</u>	<u>85.7</u>
436.cactusADM	4	844	56.6	846	56.5	<u>845</u>	<u>56.6</u>	1	<u>174</u>	<u>68.8</u>	175	68.4	173	69.1
437.leslie3d	4	1371	27.4	<u>1368</u>	<u>27.5</u>	1367	27.5	4	1321	28.5	<u>1322</u>	<u>28.4</u>	1323	28.4
444.namd	4	456	70.3	<u>456</u>	<u>70.3</u>	456	70.3	4	453	70.9	454	70.6	<u>453</u>	<u>70.8</u>
447.dealII	4	469	97.5	<u>473</u>	<u>96.7</u>	478	95.6	4	459	99.6	462	99.0	<u>460</u>	<u>99.4</u>
450.soplex	4	1035	32.2	<u>1035</u>	<u>32.2</u>	1032	32.3	4	<u>935</u>	<u>35.7</u>	936	35.7	933	35.7
453.povray	4	189	112	<u>189</u>	<u>113</u>	189	113	4	161	132	166	129	<u>164</u>	<u>130</u>
454.calculix	4	<u>479</u>	<u>68.9</u>	476	69.4	479	68.9	4	<u>336</u>	<u>98.1</u>	337	98.0	334	98.9
459.GemsFDTD	4	1690	25.1	<u>1680</u>	<u>25.3</u>	1660	25.6	4	1607	26.4	1606	26.4	<u>1607</u>	<u>26.4</u>
465.tonto	4	485	81.1	<u>486</u>	<u>81.0</u>	486	80.9	4	472	83.3	<u>473</u>	<u>83.2</u>	474	83.1
470.lbm	4	2803	19.6	<u>2803</u>	<u>19.6</u>	2803	19.6	4	1889	29.1	1889	29.1	<u>1889</u>	<u>29.1</u>
481.wrf	4	862	51.8	<u>860</u>	<u>51.9</u>	858	52.1	4	860	51.9	<u>860</u>	<u>52.0</u>	859	52.0
482.sphinx3	4	1565	49.8	<u>1559</u>	<u>50.0</u>	1557	50.1	4	<u>1412</u>	<u>55.2</u>	1415	55.1	1411	55.2

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

## Compiler Invocation Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_STACK\_SIZE set to 64M  
KMP\_AFFINITY set to physical,0

## 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



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## 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:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/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) -fast -fno-alias
-auto-ilp32
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3
```

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## Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast  
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4  
-ansi-alias

### Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -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.20090714.11.html>



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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.20090714.11.xml>

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

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