



# SPEC<sup>®</sup> CFP2006 Result

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## Dell Inc.

SPECfp<sup>®</sup>\_rate2006 = 55.7

PowerEdge 1950 III (Intel Xeon X5260, 3.33 GHz)

SPECfp\_rate\_base2006 = 51.1

CPU2006 license: 55

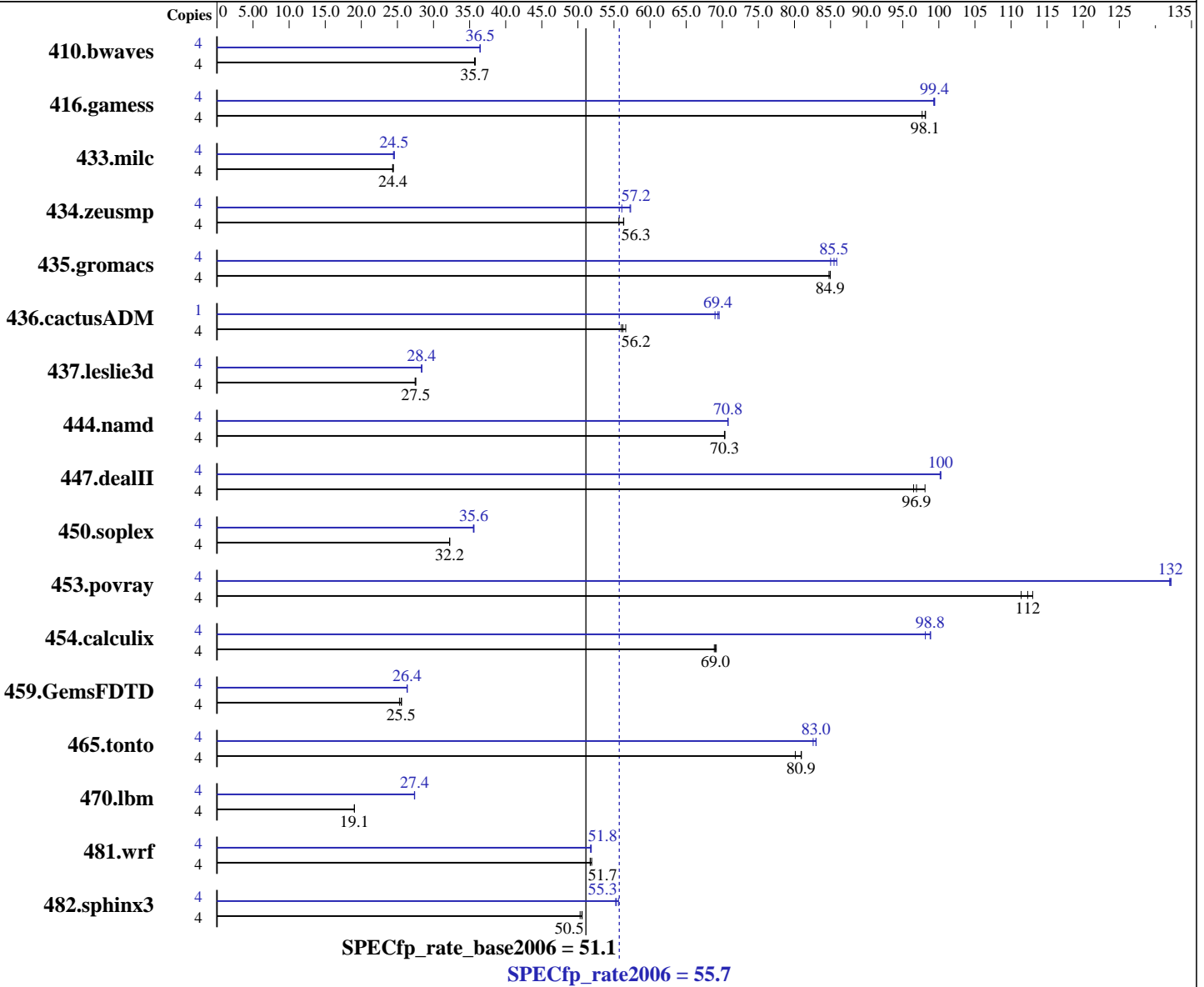
Test date: Jan-2008

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	1524	35.7	<u>1521</u>	<u>35.7</u>	1519	35.8	4	1491	36.5	1491	36.5	<u>1491</u>	<u>36.5</u>
416.gamess	4	802	97.7	798	98.2	<u>798</u>	<u>98.1</u>	4	<u>788</u>	<u>99.4</u>	788	99.4	789	99.3
433.milc	4	1509	24.3	1502	24.4	<u>1507</u>	<u>24.4</u>	4	1502	24.4	<u>1497</u>	<u>24.5</u>	1494	24.6
434.zeusmp	4	654	55.7	646	56.4	<u>646</u>	<u>56.3</u>	4	<u>636</u>	<u>57.2</u>	635	57.3	649	56.1
435.gromacs	4	337	84.8	336	85.0	<u>336</u>	<u>84.9</u>	4	<u>334</u>	<u>85.5</u>	333	85.9	336	85.0
436.cactusADM	4	844	56.6	853	56.0	<u>850</u>	<u>56.2</u>	1	172	69.6	<u>172</u>	<u>69.4</u>	173	69.0
437.leslie3d	4	1370	27.4	1366	27.5	<u>1366</u>	<u>27.5</u>	4	1327	28.3	<u>1326</u>	<u>28.4</u>	1324	28.4
444.namd	4	<u>456</u>	<u>70.3</u>	456	70.4	456	70.3	4	453	70.8	453	70.8	<u>453</u>	<u>70.8</u>
447.dealII	4	467	98.1	<u>472</u>	<u>96.9</u>	474	96.5	4	457	100	<u>457</u>	<u>100</u>	456	100
450.soplex	4	<u>1035</u>	<u>32.2</u>	1035	32.2	1035	32.2	4	937	35.6	<u>938</u>	<u>35.6</u>	939	35.5
453.povray	4	191	111	<u>189</u>	<u>112</u>	188	113	4	161	132	<u>161</u>	<u>132</u>	161	132
454.calculix	4	477	69.2	<u>478</u>	<u>69.0</u>	479	68.9	4	<u>334</u>	<u>98.8</u>	334	98.9	336	98.1
459.GemsFDTD	4	<u>1664</u>	<u>25.5</u>	1659	25.6	1679	25.3	4	1610	26.4	<u>1610</u>	<u>26.4</u>	1611	26.3
465.tonto	4	<u>486</u>	<u>80.9</u>	486	81.0	491	80.1	4	477	82.6	<u>474</u>	<u>83.0</u>	474	83.0
470.lbm	4	2889	19.0	<u>2885</u>	<u>19.1</u>	2884	19.1	4	2009	27.4	<u>2008</u>	<u>27.4</u>	2006	27.4
481.wrf	4	864	51.7	861	51.9	<u>863</u>	<u>51.7</u>	4	<u>863</u>	<u>51.8</u>	863	51.8	862	51.9
482.sphinx3	4	1550	50.3	1541	50.6	<u>1542</u>	<u>50.5</u>	4	1411	55.2	<u>1409</u>	<u>55.3</u>	1402	55.6

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.deall: -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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