



# SPEC® CFP2006 Result

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## Dell Inc.

### SPECfp®\_rate2006 = 38.0

### PowerEdge 2950 III (Intel Xeon E5205, 1.86 GHz)

### SPECfp\_rate\_base2006 = 34.8

CPU2006 license: 55

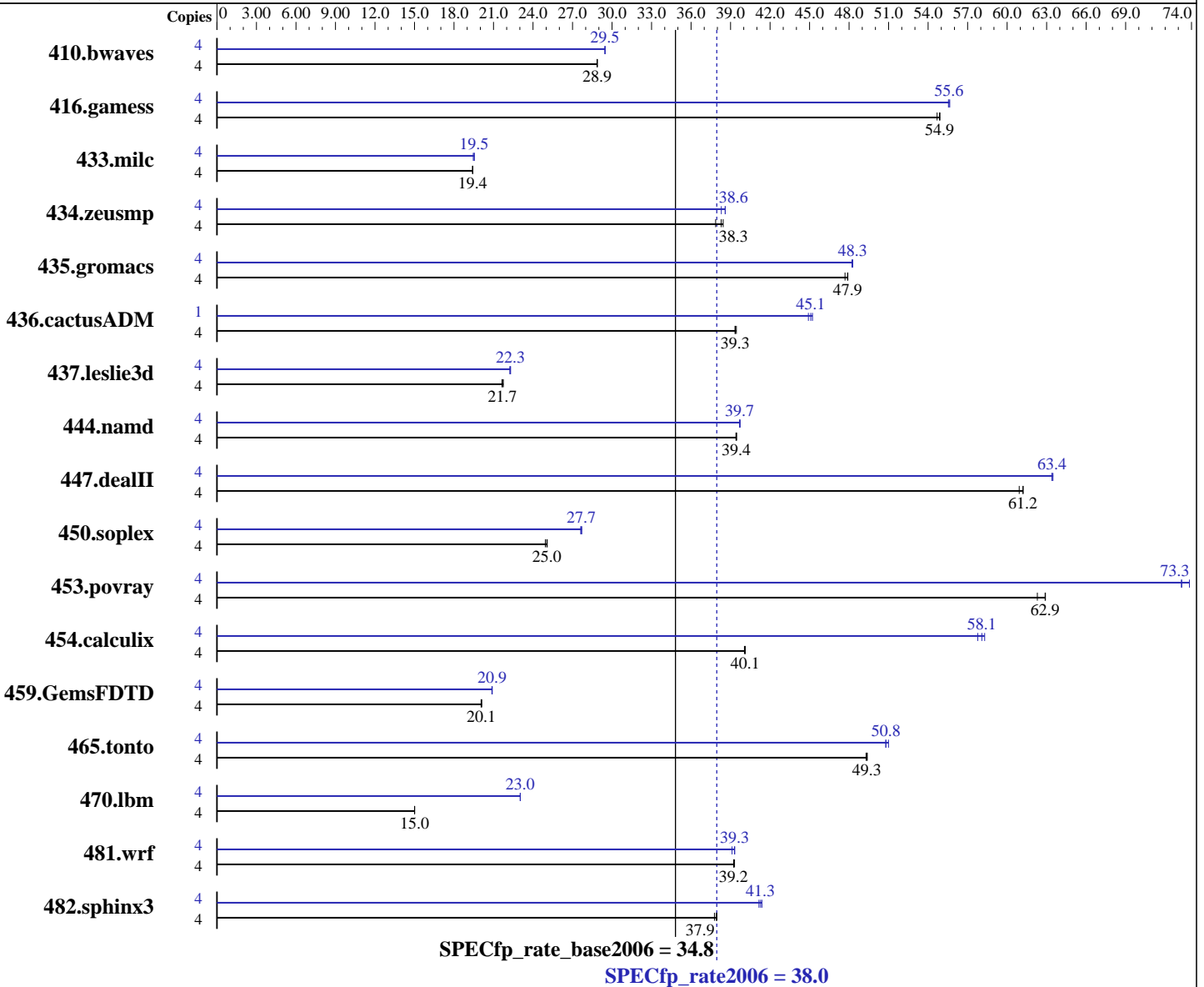
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Jan-2008

Hardware Availability: Feb-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5205  
 CPU Characteristics: 1066 MHz system bus  
 CPU MHz: 1866  
 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

Continued on next page

### 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	1883	28.9	1883	28.9	<b>1883</b>	<b>28.9</b>	4	1845	29.5	<b>1845</b>	<b>29.5</b>	1845	29.5
416.gamess	4	1427	54.9	1432	54.7	<b>1428</b>	<b>54.9</b>	4	<b>1409</b>	<b>55.6</b>	1408	55.6	1410	55.5
433.milc	4	1892	19.4	<b>1891</b>	<b>19.4</b>	1890	19.4	4	<b>1880</b>	<b>19.5</b>	1879	19.5	1887	19.5
434.zeusmp	4	<b>951</b>	<b>38.3</b>	947	38.4	961	37.9	4	950	38.3	943	38.6	<b>943</b>	<b>38.6</b>
435.gromacs	4	596	47.9	599	47.7	<b>596</b>	<b>47.9</b>	4	592	48.2	592	48.3	<b>592</b>	<b>48.3</b>
436.cactusADM	4	<b>1215</b>	<b>39.3</b>	1212	39.4	1215	39.3	1	264	45.2	266	44.9	<b>265</b>	<b>45.1</b>
437.leslie3d	4	1737	21.6	1729	21.7	<b>1734</b>	<b>21.7</b>	4	1687	22.3	<b>1687</b>	<b>22.3</b>	1691	22.2
444.namd	4	813	39.5	814	39.4	<b>813</b>	<b>39.4</b>	4	808	39.7	<b>808</b>	<b>39.7</b>	808	39.7
447.dealII	4	747	61.2	751	60.9	<b>748</b>	<b>61.2</b>	4	<b>722</b>	<b>63.4</b>	721	63.5	722	63.4
450.soplex	4	<b>1332</b>	<b>25.0</b>	1338	24.9	1330	25.1	4	1208	27.6	<b>1206</b>	<b>27.7</b>	1204	27.7
453.povray	4	338	62.9	342	62.3	<b>338</b>	<b>62.9</b>	4	291	73.2	<b>290</b>	<b>73.3</b>	288	73.8
454.calculix	4	<b>823</b>	<b>40.1</b>	823	40.1	824	40.1	4	566	58.3	571	57.8	<b>568</b>	<b>58.1</b>
459.GemsFDTD	4	<b>2113</b>	<b>20.1</b>	2111	20.1	2116	20.1	4	<b>2032</b>	<b>20.9</b>	2030	20.9	2033	20.9
465.tonto	4	797	49.4	<b>798</b>	<b>49.3</b>	799	49.3	4	772	51.0	<b>775</b>	<b>50.8</b>	775	50.8
470.lbm	4	3663	15.0	<b>3662</b>	<b>15.0</b>	3662	15.0	4	2387	23.0	2386	23.0	<b>2386</b>	<b>23.0</b>
481.wrf	4	<b>1139</b>	<b>39.2</b>	1139	39.2	1137	39.3	4	1136	39.3	<b>1137</b>	<b>39.3</b>	1142	39.1
482.sphinx3	4	2064	37.8	<b>2057</b>	<b>37.9</b>	2053	38.0	4	1894	41.2	1884	41.4	<b>1889</b>	<b>41.3</b>

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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