



# SPEC® CFP2006 Result

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Dell Inc.

SPECfp®\_rate2006 = 74.3

PowerEdge M600 (Intel Xeon E5450, 3.00 GHz)

SPECfp\_rate\_base2006 = 68.2

CPU2006 license: 55

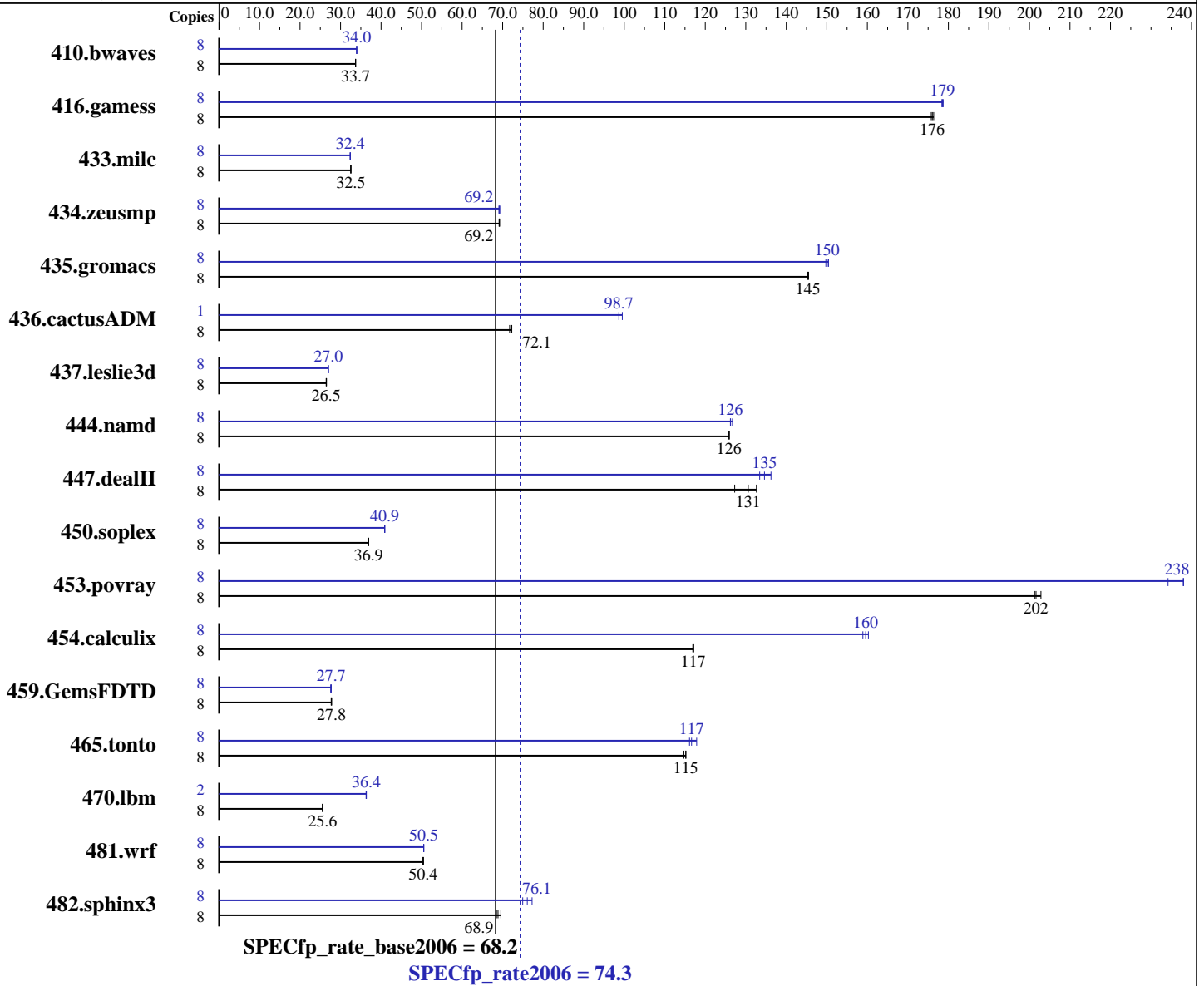
Test date: Jul-2008

Test sponsor: Dell Inc.

Hardware Availability: Mar-2008

Tested by: Dell Inc.

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5450  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16-60.0.21-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: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (4x4 GB 667 MHz ECC CL5 FB-DIMM)  
Disk Subsystem: 1 x 73 GB SAS 15000 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	8	3225	33.7	3226	33.7	<u>3225</u>	<u>33.7</u>	8	<u>3199</u>	<u>34.0</u>	3198	34.0	3200	34.0
416.gamess	8	<u>890</u>	<u>176</u>	891	176	888	176	8	876	179	878	178	<u>877</u>	<u>179</u>
433.milc	8	2259	32.5	<u>2257</u>	<u>32.5</u>	2255	32.6	8	<u>2267</u>	<u>32.4</u>	2267	32.4	2269	32.4
434.zeusmp	8	1053	69.1	<u>1052</u>	<u>69.2</u>	1051	69.2	8	<u>1052</u>	<u>69.2</u>	1051	69.3	1054	69.1
435.gromacs	8	393	145	393	145	<u>393</u>	<u>145</u>	8	381	150	<u>381</u>	<u>150</u>	380	150
436.cactusADM	8	1333	71.7	1323	72.3	<u>1326</u>	<u>72.1</u>	1	121	98.7	<u>121</u>	<u>98.7</u>	120	99.5
437.leslie3d	8	<u>2840</u>	<u>26.5</u>	2842	26.5	2834	26.5	8	2785	27.0	2789	27.0	<u>2788</u>	<u>27.0</u>
444.namd	8	<u>510</u>	<u>126</u>	510	126	510	126	8	506	127	<u>508</u>	<u>126</u>	508	126
447.dealII	8	719	127	690	133	<u>701</u>	<u>131</u>	8	672	136	<u>680</u>	<u>135</u>	686	133
450.soplex	8	<u>1806</u>	<u>36.9</u>	1806	36.9	1808	36.9	8	1631	40.9	1632	40.9	<u>1631</u>	<u>40.9</u>
453.povray	8	211	201	<u>211</u>	<u>202</u>	210	203	8	<u>179</u>	<u>238</u>	182	234	179	238
454.calculix	8	563	117	564	117	<u>564</u>	<u>117</u>	8	<u>414</u>	<u>160</u>	415	159	412	160
459.GemsFDTD	8	3054	27.8	3066	27.7	<u>3057</u>	<u>27.8</u>	8	<u>3068</u>	<u>27.7</u>	3079	27.6	3065	27.7
465.tonto	8	686	115	683	115	<u>683</u>	<u>115</u>	8	678	116	668	118	<u>675</u>	<u>117</u>
470.lbm	8	4301	25.6	<u>4302</u>	<u>25.6</u>	4302	25.5	2	757	36.3	756	36.4	<u>756</u>	<u>36.4</u>
481.wrf	8	<u>1773</u>	<u>50.4</u>	1777	50.3	1771	50.5	8	1768	50.6	1769	50.5	<u>1768</u>	<u>50.5</u>
482.sphinx3	8	2241	69.6	2277	68.5	<u>2264</u>	<u>68.9</u>	8	2080	75.0	2018	77.3	<u>2049</u>	<u>76.1</u>

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:  
Adjacent Cache Line Prefetch = Disabled (default Enabled)  
Hardware Prefetcher = Disabled (default Enabled)



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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.dealII: -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/Dell-Intel-ic10.1-fp-linux64-revC.html>



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You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Dell-Intel-ic10.1-fp-linux64-revC.xml>

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

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