



# SPEC® CFP2006 Result

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Dell Inc.

SPECfp®\_rate2006 = 62.9

PowerEdge 2950 (Intel Xeon X5355, 2.66 GHz)

SPECfp\_rate\_base2006 = 59.5

CPU2006 license: 55

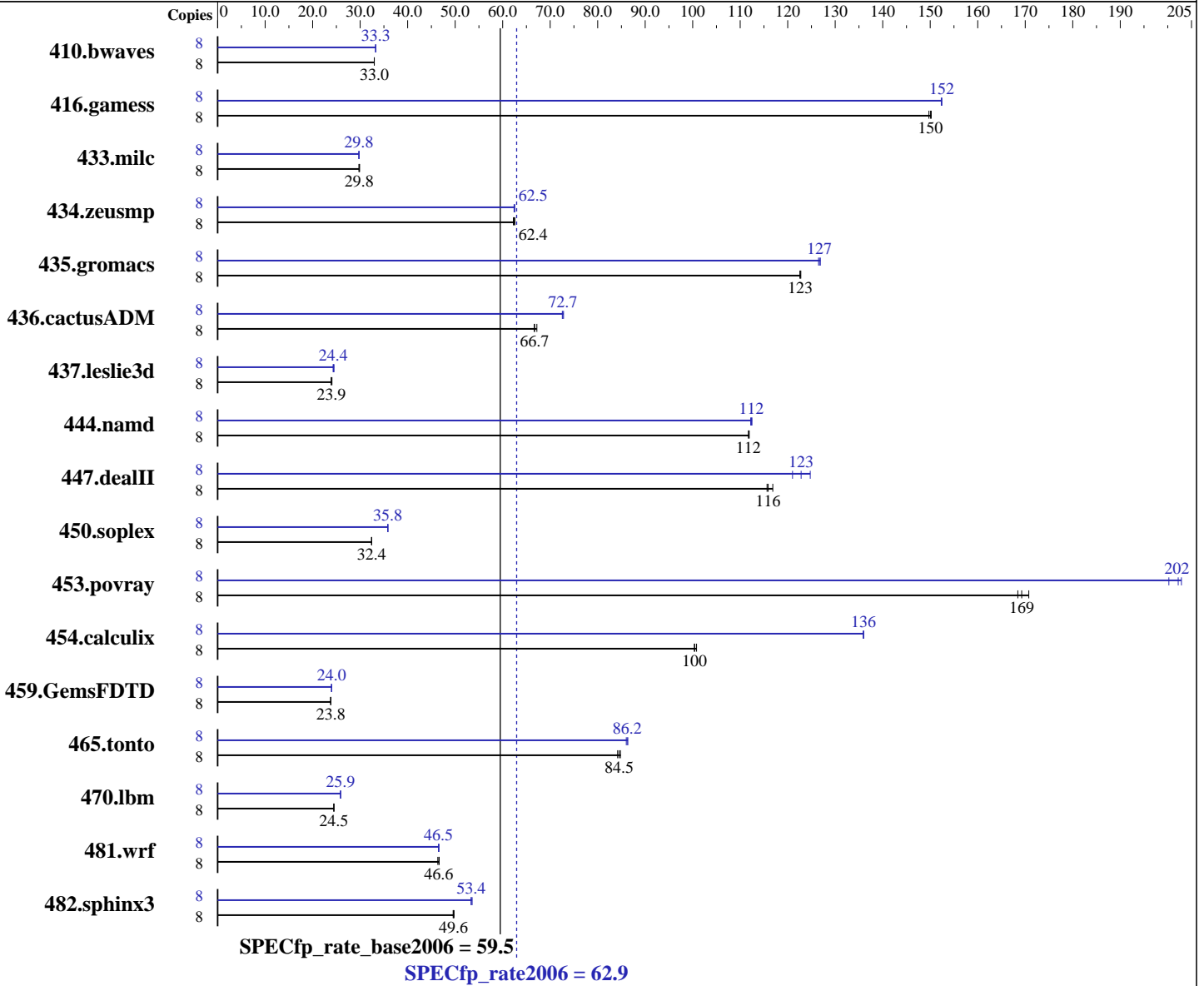
Test date: Sep-2007

Test sponsor: Dell Inc.

Hardware Availability: Dec-2006

Tested by: Dell Inc.

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5355  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 2666  
 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: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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### Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10  
 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: None  
Other Cache: None  
Memory: 16 GB (8x2 GB 667 MHz ECC CL5 FB-DIMM)  
Disk Subsystem: 1 x 73 GB SAS 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	3297	33.0	3296	33.0	<u>3297</u>	<u>33.0</u>	8	3268	33.3	<u>3268</u>	<u>33.3</u>	3269	33.3
416.gamess	8	<u>1044</u>	<u>150</u>	1046	150	1043	150	8	1028	152	1028	152	<u>1028</u>	<u>152</u>
433.milc	8	2469	29.7	<u>2465</u>	<u>29.8</u>	2457	29.9	8	2472	29.7	2465	29.8	<u>2469</u>	<u>29.8</u>
434.zeusmp	8	1164	62.6	1169	62.3	<u>1167</u>	<u>62.4</u>	8	1164	62.5	<u>1165</u>	<u>62.5</u>	1167	62.4
435.gromacs	8	466	123	465	123	<u>466</u>	<u>123</u>	8	452	126	<u>451</u>	<u>127</u>	450	127
436.cactusADM	8	1435	66.6	<u>1433</u>	<u>66.7</u>	1423	67.2	8	<u>1316</u>	<u>72.7</u>	1318	72.6	1313	72.8
437.leslie3d	8	3124	24.1	<u>3143</u>	<u>23.9</u>	3145	23.9	8	3094	24.3	<u>3084</u>	<u>24.4</u>	3068	24.5
444.namd	8	573	112	<u>574</u>	<u>112</u>	574	112	8	<u>571</u>	<u>112</u>	572	112	570	112
447.dealII	8	<u>790</u>	<u>116</u>	783	117	791	116	8	<u>745</u>	<u>123</u>	756	121	734	125
450.soplex	8	<u>2057</u>	<u>32.4</u>	2057	32.4	2061	32.4	8	<u>1863</u>	<u>35.8</u>	1861	35.9	1863	35.8
453.povray	8	253	168	249	171	<u>251</u>	<u>169</u>	8	210	203	<u>210</u>	<u>202</u>	213	200
454.calculix	8	658	100	655	101	<u>657</u>	<u>100</u>	8	485	136	486	136	<u>485</u>	<u>136</u>
459.GemsFDTD	8	3570	23.8	<u>3564</u>	<u>23.8</u>	3560	23.8	8	<u>3539</u>	<u>24.0</u>	3537	24.0	3541	24.0
465.tonto	8	<u>932</u>	<u>84.5</u>	928	84.8	935	84.2	8	912	86.4	<u>913</u>	<u>86.2</u>	915	86.0
470.lbm	8	4493	24.5	4491	24.5	<u>4492</u>	<u>24.5</u>	8	4248	25.9	<u>4248</u>	<u>25.9</u>	4247	25.9
481.wrf	8	1928	46.3	1917	46.6	<u>1919</u>	<u>46.6</u>	8	1918	46.6	<u>1921</u>	<u>46.5</u>	1921	46.5
482.sphinx3	8	3145	49.6	<u>3141</u>	<u>49.6</u>	3133	49.8	8	2923	53.3	2910	53.6	<u>2920</u>	<u>53.4</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):

```
/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) -fast -fno-alias
-auto-ilp32
```

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## Peak Optimization Flags (Continued)

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

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 -auto-ilp32

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

481.wrf: -fast -auto-ilp32



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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.20090714.17.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.20090714.17.xml>

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

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