



# SPEC<sup>®</sup> CFP2006 Result

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## SGI

SGI Altix ICE 8200 (Intel Xeon Processor X5355, 2.66 GHz)

SPECfp<sup>®</sup>\_rate2006 = 63.2

SPECfp\_rate\_base2006 = 59.9

CPU2006 license: 4

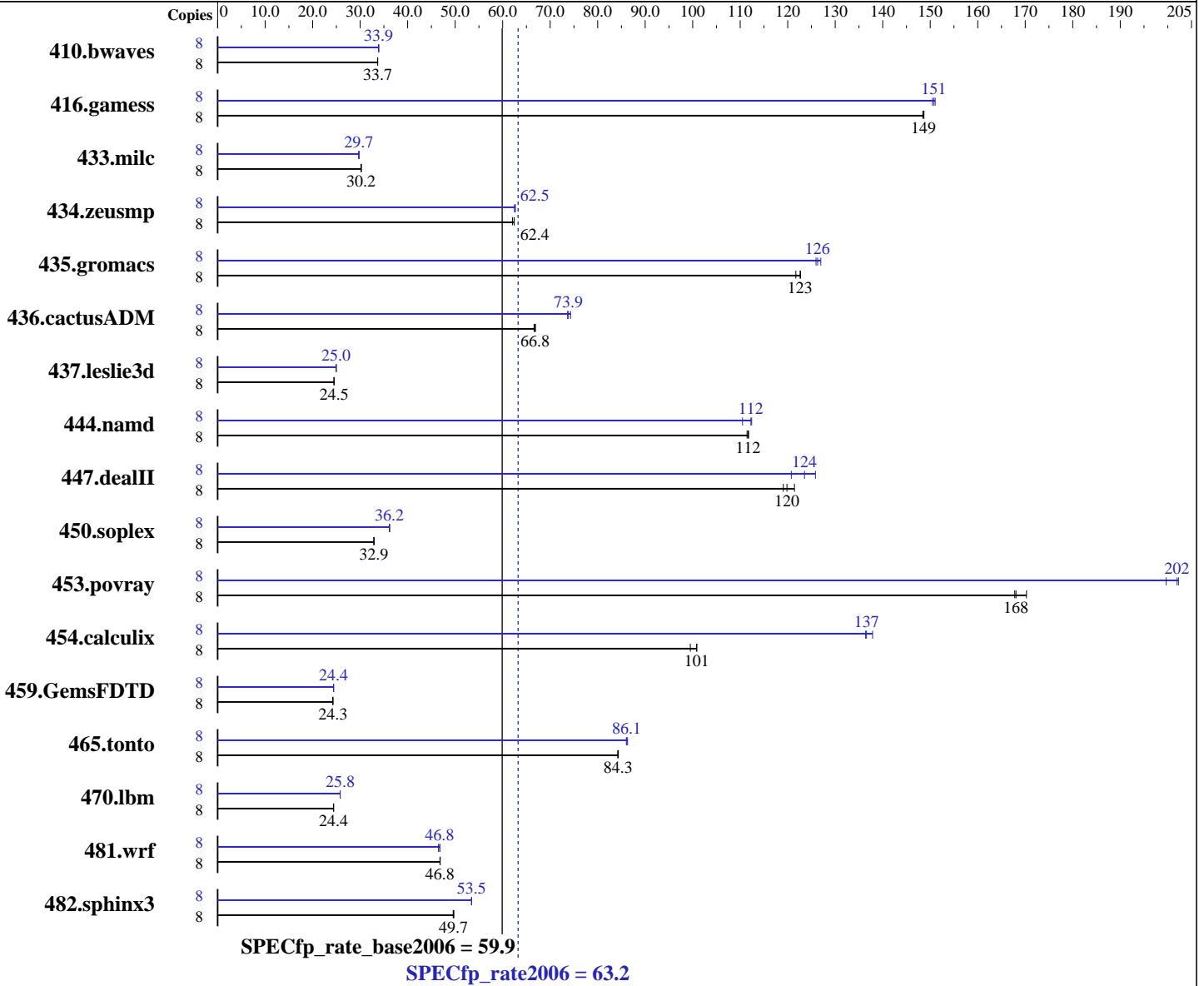
Test sponsor: SGI

Tested by: SGI

Test date: Sep-2007

Hardware Availability: Aug-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5355  
 CPU Characteristics: Quad Core, 2.66 GHz  
 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: SUSE Linux Enterprise Server 10 SP1 (x86\_64)  
 Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64, Version 10.1, Build 20070824  
 Auto Parallel: No  
 File System: NFSv3 IPoIB  
 System State: Multi-user, run level 3  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8\*2GB PC2-5300 FB-DIMMs)  
Disk Subsystem: 16 TB RAID 6+1  
32 x 500 GB SATA (Seagate Barracuda 7200 rpm)  
Other Hardware: None

Other Software: SGI ProPack Compute Node 5 SP2 for Linux Binutils 2.17

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	3227	33.7	3229	33.7	<b>3228</b>	<b>33.7</b>	8	3208	33.9	3207	33.9	<b>3208</b>	<b>33.9</b>		
416.gamess	8	1055	148	1054	149	<b>1054</b>	<b>149</b>	8	1041	150	<b>1039</b>	<b>151</b>	1037	151		
433.milc	8	2428	30.3	<b>2431</b>	<b>30.2</b>	2434	30.2	8	2466	29.8	<b>2472</b>	<b>29.7</b>	2473	29.7		
434.zeusmp	8	1173	62.1	<b>1167</b>	<b>62.4</b>	1166	62.4	8	1164	62.5	1161	62.7	<b>1164</b>	<b>62.5</b>		
435.gromacs	8	469	122	466	123	<b>466</b>	<b>123</b>	8	<b>452</b>	<b>126</b>	450	127	453	126		
436.cactusADM	8	1435	66.6	1429	66.9	<b>1431</b>	<b>66.8</b>	8	<b>1294</b>	<b>73.9</b>	1298	73.7	1287	74.3		
437.leslie3d	8	3067	24.5	3071	24.5	<b>3068</b>	<b>24.5</b>	8	3013	25.0	3014	25.0	<b>3014</b>	<b>25.0</b>		
444.namd	8	<b>575</b>	<b>112</b>	576	111	574	112	8	581	110	571	112	<b>572</b>	<b>112</b>		
447.dealII	8	<b>764</b>	<b>120</b>	754	121	769	119	8	727	126	758	121	<b>741</b>	<b>124</b>		
450.soplex	8	<b>2027</b>	<b>32.9</b>	2026	32.9	2030	32.9	8	1847	36.1	<b>1845</b>	<b>36.2</b>	1841	36.2		
453.povray	8	<b>253</b>	<b>168</b>	254	168	250	170	8	213	200	<b>211</b>	<b>202</b>	210	202		
454.calculix	8	663	99.5	654	101	<b>654</b>	<b>101</b>	8	<b>483</b>	<b>137</b>	484	136	479	138		
459.GemsFDTD	8	3497	24.3	3505	24.2	<b>3497</b>	<b>24.3</b>	8	3479	24.4	<b>3477</b>	<b>24.4</b>	3476	24.4		
465.tonto	8	933	84.4	935	84.2	<b>934</b>	<b>84.3</b>	8	<b>914</b>	<b>86.1</b>	915	86.0	912	86.3		
470.lbm	8	4504	24.4	4504	24.4	<b>4504</b>	<b>24.4</b>	8	4262	25.8	<b>4262</b>	<b>25.8</b>	4262	25.8		
481.wrf	8	1907	46.9	1909	46.8	<b>1909</b>	<b>46.8</b>	8	1923	46.5	<b>1911</b>	<b>46.8</b>	1910	46.8		
482.sphinx3	8	<b>3139</b>	<b>49.7</b>	3145	49.6	3136	49.7	8	2916	53.5	<b>2917</b>	<b>53.5</b>	2918	53.4		

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

## General Notes

BIOS settings:

Hardware Prefetcher: disabled

Adjacent Cacheline Prefetcher: disabled

The taskset utility was used to bind processes to cores

Snoop Filter: disabled

## Base Compiler Invocation

C benchmarks:

icc

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## Base Compiler Invocation (Continued)

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.20090714.07.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.20090714.07.xml>

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