



# SPEC® CFP2006 Result

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## Itautec

### SPECfp®\_rate2006 = 42.0

### Servidor Itautec LX201 (Intel Xeon E5440)

### SPECfp\_rate\_base2006 = 38.3

CPU2006 license: 9001

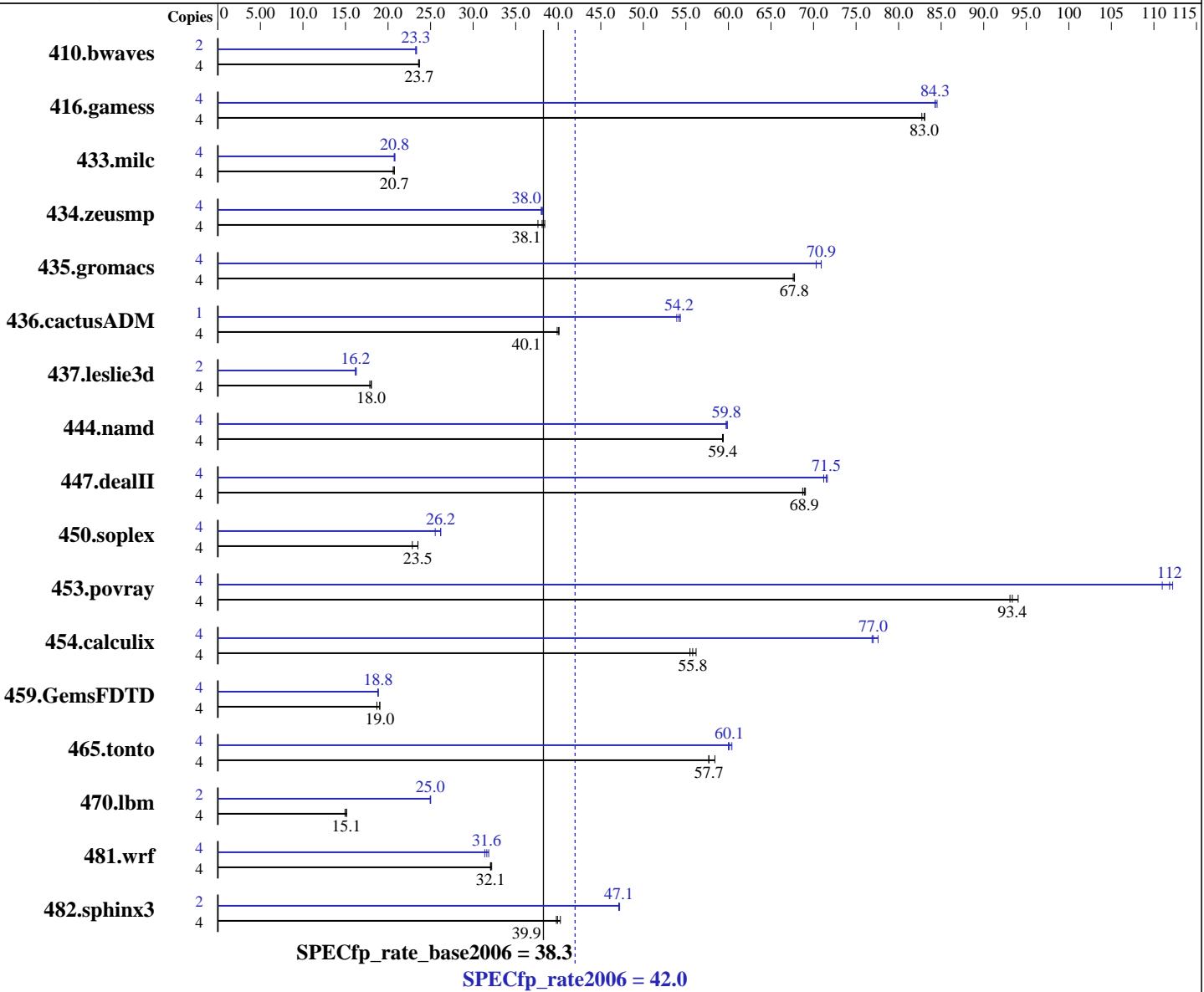
Test date: Mar-2008

Test sponsor: Itautec

Hardware Availability: Dec-2007

Tested by: Itautec

Software Availability: Jan-2008



### Hardware

CPU Name: Intel Xeon E5440  
 CPU Characteristics:  
 CPU MHz: 2830  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 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) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux Build 20080112 Package ID: l\_cc\_p\_10.1.012, l\_fc\_p\_10.1.012  
 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: 8 GB (8 \* 1 GB PC2-5300 FBDIMM, CL-5-5-5, ECC)  
Disk Subsystem: 1 x SATA-2, 160GB, 7200 RPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: Binutils 2.17.10.50

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	4	2305	23.6	<u>2298</u>	<u>23.7</u>	2295	23.7	2	1168	23.3	<u>1168</u>	<u>23.3</u>	1164	23.4		
416.gamess	4	943	83.1	<u>943</u>	<u>83.0</u>	947	82.7	4	927	84.5	929	84.3	<u>929</u>	<u>84.3</u>		
433.milc	4	1782	20.6	<u>1772</u>	<u>20.7</u>	1771	20.7	4	1773	20.7	<u>1767</u>	<u>20.8</u>	1765	20.8		
434.zeusmp	4	968	37.6	<u>955</u>	<u>38.1</u>	948	38.4	4	<u>957</u>	<u>38.0</u>	958	38.0	953	38.2		
435.gromacs	4	<u>422</u>	<u>67.8</u>	422	67.6	421	67.8	4	403	70.9	<u>403</u>	<u>70.9</u>	406	70.3		
436.cactusADM	4	1199	39.9	<u>1193</u>	<u>40.1</u>	1192	40.1	1	220	54.4	222	53.9	<u>220</u>	<u>54.2</u>		
437.leslie3d	4	2106	17.9	<u>2088</u>	<u>18.0</u>	2083	18.0	2	1163	16.2	1155	16.3	<u>1163</u>	<u>16.2</u>		
444.namd	4	541	59.3	540	59.4	<u>540</u>	<u>59.4</u>	4	<u>537</u>	<u>59.8</u>	537	59.7	536	59.9		
447.dealII	4	666	68.7	663	69.1	<u>664</u>	<u>68.9</u>	4	643	71.2	639	71.6	<u>640</u>	<u>71.5</u>		
450.soplex	4	1460	22.9	1418	23.5	<u>1419</u>	<u>23.5</u>	4	1306	25.5	<u>1275</u>	<u>26.2</u>	1273	26.2		
453.povray	4	<u>228</u>	<u>93.4</u>	229	93.1	226	94.0	4	192	111	<u>190</u>	<u>112</u>	190	112		
454.calculix	4	595	55.5	587	56.2	<u>591</u>	<u>55.8</u>	4	425	77.6	<u>428</u>	<u>77.0</u>	429	76.9		
459.GemsFDTD	4	2230	19.0	<u>2231</u>	<u>19.0</u>	2271	18.7	4	<u>2253</u>	<u>18.8</u>	2251	18.9	2256	18.8		
465.tonto	4	674	58.4	682	57.7	<u>682</u>	<u>57.7</u>	4	652	60.4	656	60.0	<u>655</u>	<u>60.1</u>		
470.lbm	4	3678	14.9	<u>3637</u>	<u>15.1</u>	3632	15.1	2	<u>1101</u>	<u>25.0</u>	1101	25.0	1099	25.0		
481.wrf	4	<u>1394</u>	<u>32.1</u>	1388	32.2	1395	32.0	4	<u>1414</u>	<u>31.6</u>	1424	31.4	1404	31.8		
482.sphinx3	4	1937	40.3	<u>1953</u>	<u>39.9</u>	1960	39.8	2	826	47.2	<u>827</u>	<u>47.1</u>	827	47.1		

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 benchmark copies to processors.



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CPU2006 license: 9001  
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Tested by: Itaotec

Test date: Mar-2008  
Hardware Availability: Dec-2007  
Software Availability: Jan-2008

## Platform Notes

BIOS configuration:  
Hardware Prefetch Disabled

## 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.deallI: -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

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## Base Optimization Flags (Continued)

Fortran benchmarks:  
-fast

Benchmarks using both Fortran and C:  
-fast

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.012/bin/icc -L/opt/intel/cc/10.1.012/lib  
-I/opt/intel/cc/10.1.012/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.012/bin/icpc -L/opt/intel/cc/10.1.012/lib  
-I/opt/intel/cc/10.1.012/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.012/bin/ifort -L/opt/intel/fc/10.1.012/lib  
-I/opt/intel/fc/10.1.012/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.dealII: -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
```



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## 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

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

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## Peak Optimization Flags (Continued)

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/Itautec-ic10.1-FP-intel64-linux-flags.20090713.00.html>

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

<http://www.spec.org/cpu2006/flags/Itautec-ic10.1-FP-intel64-linux-flags.20090713.00.xml>

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