



# SPEC® CFP2006 Result

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## IBM Corporation

SPECfp®2006 = 13.3

IBM BladeCenter HS21 XM (Intel Xeon E5310)

SPECfp\_base2006 = 11.4

CPU2006 license: 11

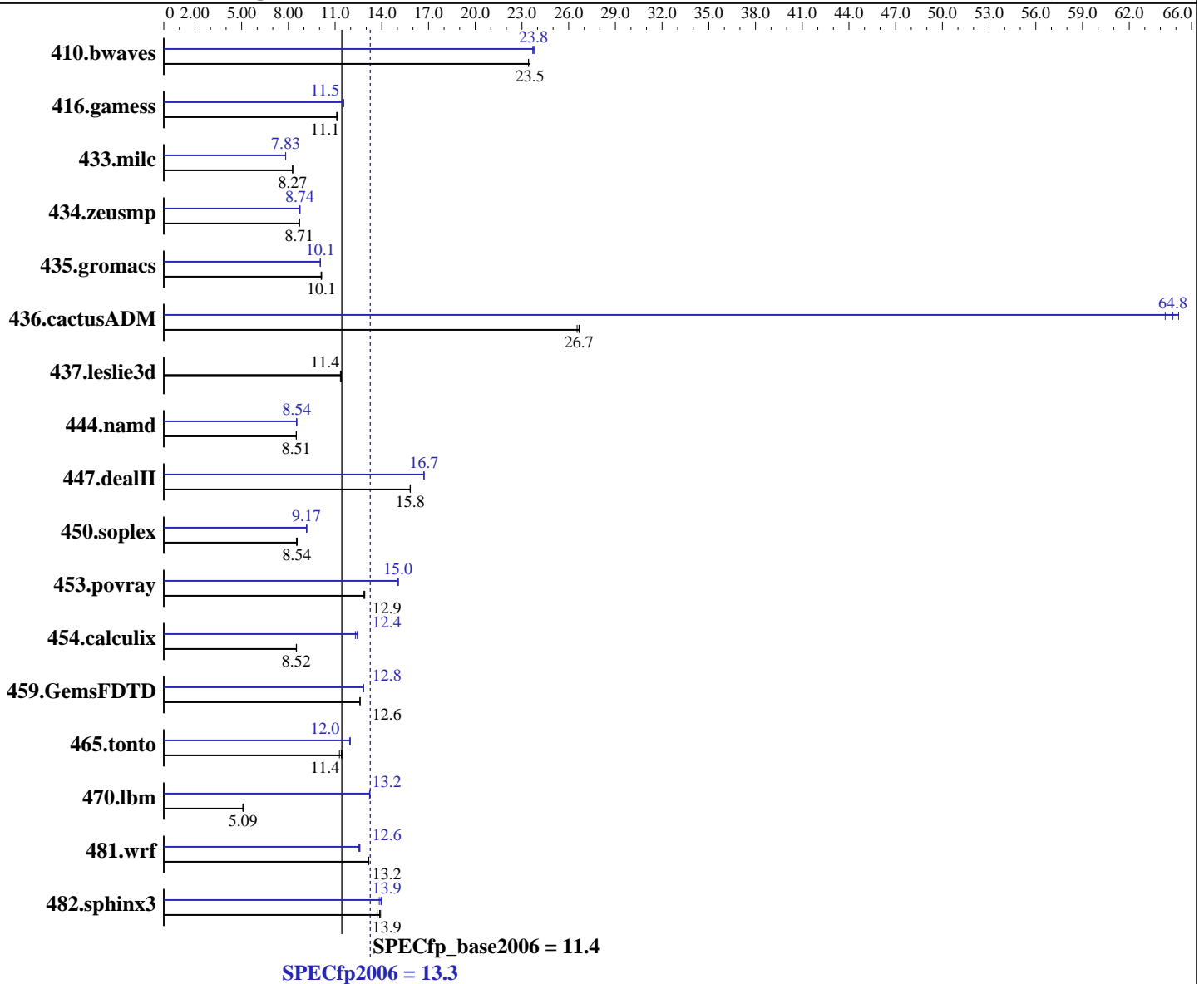
Test date: Aug-2007

Test sponsor: IBM Corporation

Hardware Availability: Feb-2007

Tested by: IBM Corporation

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5310  
 CPU Characteristics: 1066MHz system bus  
 CPU MHz: 1600  
 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: SLES 10 (x86\_64), 2.6.16.21-0.8-smp  
 Compiler: Intel C++ and Fortran Compiler for Linux version 10.1 Build 20070824  
 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 (8 x 2GB DRR2-5300F ECC)  
Disk Subsystem: 1 x 36 GB SAS, 10000 RPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	580	23.4	<b>578</b>	<b>23.5</b>	578	23.5	574	23.7	572	23.8	<b>572</b>	<b>23.8</b>
416.gamess	1764	11.1	<b>1759</b>	<b>11.1</b>	1759	11.1	1696	11.5	1698	11.5	<b>1697</b>	<b>11.5</b>
433.milc	1109	8.28	<b>1110</b>	<b>8.27</b>	1110	8.27	1173	7.83	<b>1173</b>	<b>7.83</b>	1174	7.82
434.zeusmp	1046	8.70	1045	8.71	<b>1045</b>	<b>8.71</b>	<b>1041</b>	<b>8.74</b>	1041	8.74	1041	8.74
435.gromacs	704	10.1	<b>705</b>	<b>10.1</b>	707	10.1	710	10.1	<b>710</b>	<b>10.1</b>	710	10.1
436.cactusADM	448	26.7	<b>448</b>	<b>26.7</b>	450	26.5	183	65.2	<b>184</b>	<b>64.8</b>	186	64.3
437.leslie3d	<b>826</b>	<b>11.4</b>	825	11.4	829	11.3	<b>826</b>	<b>11.4</b>	825	11.4	829	11.3
444.namd	<b>942</b>	<b>8.51</b>	942	8.51	942	8.51	<b>940</b>	<b>8.54</b>	942	8.52	939	8.54
447.dealII	723	15.8	722	15.8	<b>723</b>	<b>15.8</b>	<b>684</b>	<b>16.7</b>	684	16.7	685	16.7
450.soplex	973	8.57	979	8.52	<b>977</b>	<b>8.54</b>	908	9.19	910	9.16	<b>909</b>	<b>9.17</b>
453.povray	415	12.8	412	12.9	<b>413</b>	<b>12.9</b>	355	15.0	<b>354</b>	<b>15.0</b>	353	15.1
454.calculix	970	8.51	968	8.52	<b>969</b>	<b>8.52</b>	671	12.3	662	12.5	<b>665</b>	<b>12.4</b>
459.GemsFDTD	842	12.6	842	12.6	<b>842</b>	<b>12.6</b>	828	12.8	<b>827</b>	<b>12.8</b>	827	12.8
465.tonto	860	11.4	<b>863</b>	<b>11.4</b>	873	11.3	<b>823</b>	<b>12.0</b>	822	12.0	824	11.9
470.lbm	2696	5.10	2705	5.08	<b>2698</b>	<b>5.09</b>	1040	13.2	<b>1039</b>	<b>13.2</b>	1038	13.2
481.wrf	849	13.2	848	13.2	<b>848</b>	<b>13.2</b>	887	12.6	892	12.5	<b>888</b>	<b>12.6</b>
482.sphinx3	<b>1406</b>	<b>13.9</b>	1400	13.9	1422	13.7	1395	14.0	<b>1397</b>	<b>13.9</b>	1409	13.8

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

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to 200M

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

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## Base Compiler Invocation (Continued)

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 -parallel

C++ benchmarks:

-fast -parallel

Fortran benchmarks:

-fast -parallel

Benchmarks using both Fortran and C:

-fast -parallel

## Peak Compiler Invocation

C benchmarks (except as noted below):

/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icc  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib

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## Peak Compiler Invocation (Continued)

C benchmarks (except as noted below) (continued):

-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icpc

-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib

-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include

Fortran benchmarks:

ifort

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

437.leslie3d: -DSPEC\_CPU\_LP64

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

## 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 -parallel

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: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch -parallel

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 -parallel -prefetch -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.20090714.21.html>

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

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

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