



# SPEC® CFP2006 Result

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## IBM Corporation

SPECfp®2006 = 19.7

## IBM System x3550 (Intel Xeon X5355)

SPECfp\_base2006 = 16.9

CPU2006 license: 11

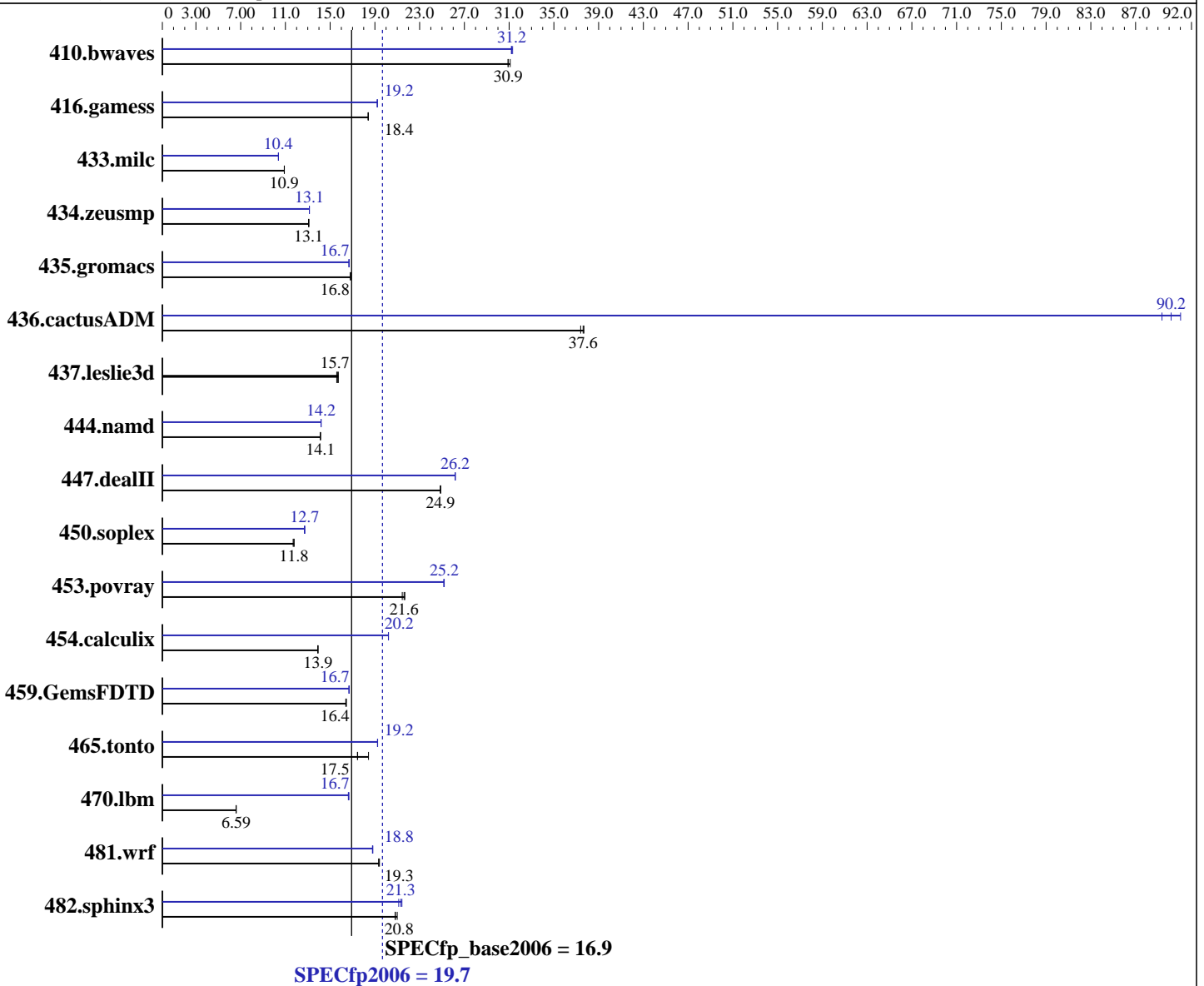
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Sep-2007

Hardware Availability: Apr-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5355  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 2667  
 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  
 Peak Pointers: 32/64-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, 15000 RPM  
Other Hardware: None

Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	440	30.9	<b>440</b>	<b>30.9</b>	437	31.1	434	31.3	<b>435</b>	<b>31.2</b>	436	31.2
416.gamess	<b>1063</b>	<b>18.4</b>	1063	18.4	1065	18.4	1019	19.2	1019	19.2	<b>1019</b>	<b>19.2</b>
433.milc	842	10.9	<b>842</b>	<b>10.9</b>	842	10.9	884	10.4	885	10.4	<b>885</b>	<b>10.4</b>
434.zeusmp	<b>696</b>	<b>13.1</b>	695	13.1	696	13.1	693	13.1	<b>692</b>	<b>13.1</b>	692	13.1
435.gromacs	425	16.8	<b>424</b>	<b>16.8</b>	424	16.8	428	16.7	428	16.7	<b>428</b>	<b>16.7</b>
436.cactusADM	320	37.4	317	37.7	<b>318</b>	<b>37.6</b>	134	89.4	131	91.0	<b>133</b>	<b>90.2</b>
437.leslie3d	598	15.7	<b>600</b>	<b>15.7</b>	603	15.6	598	15.7	<b>600</b>	<b>15.7</b>	603	15.6
444.namd	568	14.1	<b>568</b>	<b>14.1</b>	567	14.1	565	14.2	565	14.2	<b>565</b>	<b>14.2</b>
447.dealII	460	24.9	<b>460</b>	<b>24.9</b>	460	24.9	<b>437</b>	<b>26.2</b>	437	26.2	437	26.2
450.soplex	708	11.8	713	11.7	<b>709</b>	<b>11.8</b>	657	12.7	655	12.7	<b>655</b>	<b>12.7</b>
453.povray	248	21.4	245	21.7	<b>246</b>	<b>21.6</b>	211	25.2	<b>211</b>	<b>25.2</b>	212	25.1
454.calculix	593	13.9	<b>593</b>	<b>13.9</b>	593	13.9	408	20.2	<b>408</b>	<b>20.2</b>	408	20.2
459.GemsFDTD	645	16.4	<b>646</b>	<b>16.4</b>	647	16.4	635	16.7	<b>636</b>	<b>16.7</b>	636	16.7
465.tonto	534	18.4	<b>564</b>	<b>17.5</b>	564	17.4	511	19.2	512	19.2	<b>512</b>	<b>19.2</b>
470.lbm	2080	6.61	2087	6.58	<b>2084</b>	<b>6.59</b>	827	16.6	<b>825</b>	<b>16.7</b>	824	16.7
481.wrf	576	19.4	<b>577</b>	<b>19.3</b>	578	19.3	595	18.8	<b>594</b>	<b>18.8</b>	594	18.8
482.sphinx3	928	21.0	<b>936</b>	<b>20.8</b>	936	20.8	<b>914</b>	<b>21.3</b>	910	21.4	923	21.1

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:

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.21.xml>



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