



SPEC® CFP2006 Result

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IBM Corporation

SPECfp®2006 = **33.8**

IBM BladeCenter HX5 (Intel Xeon X7550)

SPECfp_base2006 = **31.6**

CPU2006 license: 11

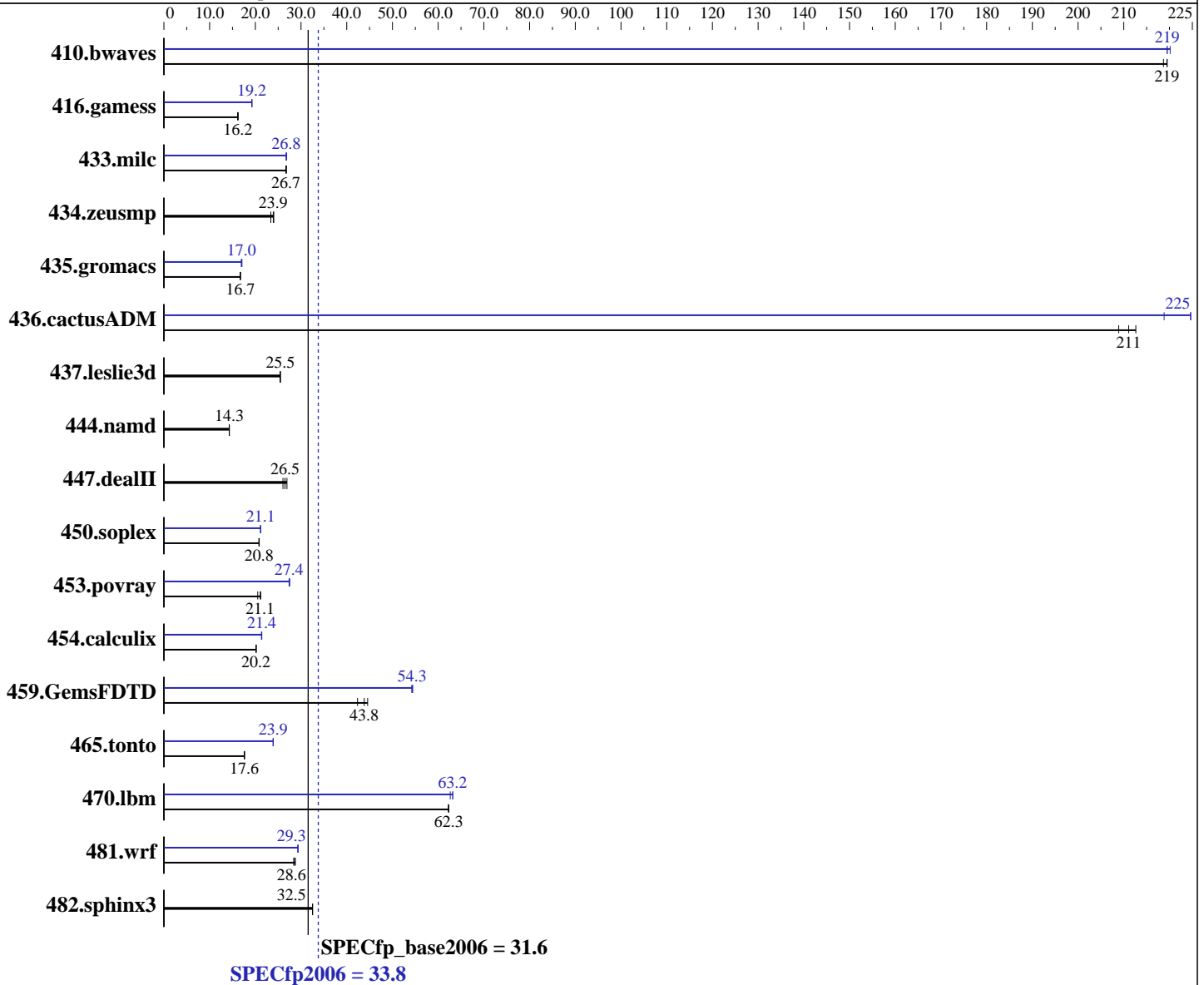
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Aug-2010

Hardware Availability: Oct-2010

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon X7550
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

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Software

Operating System: SuSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 18 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB PC3-8500R CL7, Quad Rank, running at 978 MHz)
Disk Subsystem: 2 x 50 GB SATA, SSD, RAID 0
Other Hardware: None

Base Pointers: 64-bit
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	62.1	219	61.9	219	61.9	219	61.7	220	61.9	219	61.9	219
416.gamess	1209	16.2	1206	16.2	1215	16.1	1017	19.2	1017	19.3	1017	19.2
433.milc	342	26.8	344	26.7	344	26.7	343	26.7	342	26.9	343	26.8
434.zeusmp	389	23.4	379	24.0	380	23.9	389	23.4	379	24.0	380	23.9
435.gromacs	428	16.7	426	16.8	427	16.7	420	17.0	418	17.1	422	16.9
436.cactusADM	56.6	211	57.2	209	56.2	213	53.2	225	54.6	219	53.2	225
437.leslie3d	369	25.5	369	25.5	370	25.4	369	25.5	369	25.5	370	25.4
444.namd	561	14.3	560	14.3	560	14.3	561	14.3	560	14.3	560	14.3
447.dealII	425	26.9	439	26.0	432	26.5	425	26.9	439	26.0	432	26.5
450.soplex	400	20.9	401	20.8	401	20.8	394	21.2	395	21.1	394	21.1
453.povray	259	20.5	251	21.2	252	21.1	193	27.5	194	27.4	194	27.4
454.calculix	409	20.2	409	20.2	410	20.1	387	21.3	385	21.4	386	21.4
459.GemsFDTD	250	42.4	242	43.8	238	44.6	195	54.3	195	54.4	196	54.2
465.tonto	560	17.6	559	17.6	557	17.7	411	23.9	412	23.9	412	23.9
470.lbm	221	62.2	221	62.3	220	62.3	217	63.2	217	63.2	219	62.6
481.wrf	391	28.6	393	28.4	388	28.8	381	29.4	381	29.3	381	29.3
482.sphinx3	599	32.5	600	32.5	600	32.5	599	32.5	600	32.5	600	32.5

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

Operating System Notes

```
echo 1 > /proc/sys/vm/zone_reclaim_mode
```

Platform Notes

Turbo Boost set to Traditional in BIOS

General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter

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General Notes (Continued)

KMP_STACKSIZE set to 200M

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-ansi-alias`

470.lbm: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-parallel -ansi-alias -auto-ilp32`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

447.dealIII: `basepeak = yes`

450.soplex: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3 -auto-ilp32`

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Peak Optimization Flags (Continued)

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.00.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.00.xml>



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