



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp®2006 = 52.1

IBM BladeCenter HS22 (Intel Xeon E5649)

SPECfp_base2006 = 48.7

CPU2006 license: 11

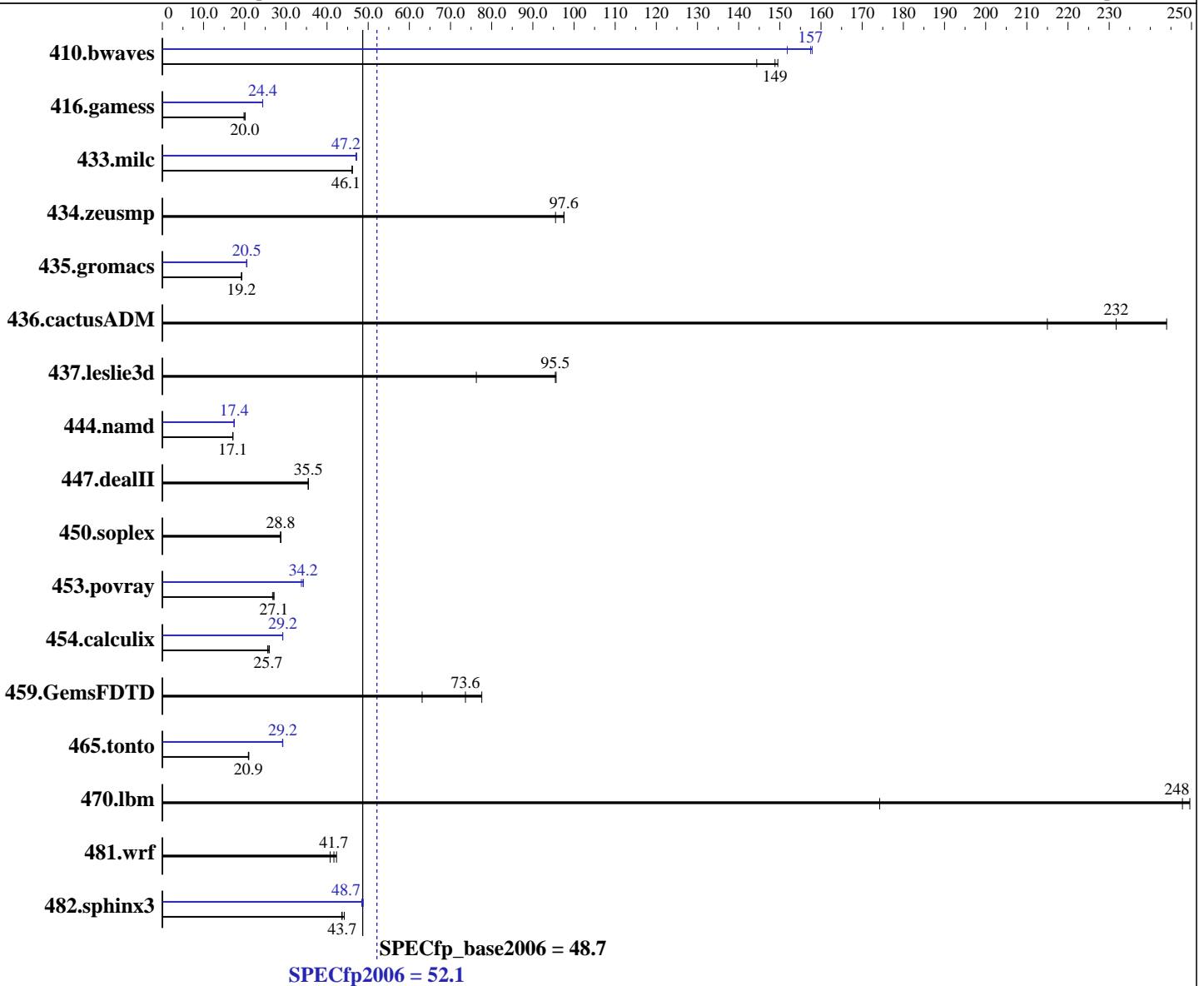
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2011

Hardware Availability: Feb-2011

Software Availability: Apr-2011



Hardware

CPU Name: Intel Xeon E5649
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
 CPU MHz: 2533
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0 Update 3
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = **52.1**

IBM BladeCenter HS22 (Intel Xeon E5649)

SPECfp_base2006 = **48.7**

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Jul-2011
Hardware Availability: Feb-2011
Software Availability: Apr-2011

L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB 2Rx8 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 73 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	90.9	150	<u>91.3</u>	<u>149</u>	94.1	144	86.1	158	89.5	152	<u>86.3</u>	<u>157</u>
416.gamess	987	19.8	973	20.1	<u>977</u>	<u>20.0</u>	<u>803</u>	<u>24.4</u>	803	24.4	803	24.4
433.milc	199	46.1	199	46.1	<u>199</u>	<u>46.1</u>	195	47.0	195	47.2	<u>195</u>	<u>47.2</u>
434.zeusmp	95.3	95.5	93.3	97.6	<u>93.3</u>	<u>97.6</u>	95.3	95.5	93.3	97.6	<u>93.3</u>	<u>97.6</u>
435.gromacs	370	19.3	<u>371</u>	<u>19.2</u>	372	19.2	349	20.4	348	20.5	<u>348</u>	<u>20.5</u>
436.cactusADM	55.6	215	<u>51.6</u>	<u>232</u>	49.0	244	55.6	215	<u>51.6</u>	<u>232</u>	49.0	244
437.leslie3d	98.3	95.7	123	76.3	<u>98.5</u>	<u>95.5</u>	98.3	95.7	123	76.3	<u>98.5</u>	<u>95.5</u>
444.namd	<u>468</u>	<u>17.1</u>	468	17.1	468	17.1	<u>460</u>	<u>17.4</u>	460	17.4	460	17.4
447.dealII	323	35.5	323	35.4	<u>323</u>	<u>35.5</u>	323	35.5	323	35.4	<u>323</u>	<u>35.5</u>
450.soplex	<u>290</u>	<u>28.8</u>	290	28.8	290	28.7	<u>290</u>	<u>28.8</u>	290	28.8	290	28.7
453.povray	<u>196</u>	<u>27.1</u>	199	26.8	196	27.1	155	34.2	158	33.8	<u>155</u>	<u>34.2</u>
454.calculix	<u>321</u>	<u>25.7</u>	322	25.6	317	26.0	282	29.2	<u>282</u>	<u>29.2</u>	282	29.2
459.GemsFDTD	<u>144</u>	<u>73.6</u>	168	63.1	137	77.6	<u>144</u>	<u>73.6</u>	168	63.1	137	77.6
465.tonto	471	20.9	468	21.0	<u>470</u>	<u>20.9</u>	<u>336</u>	<u>29.2</u>	336	29.3	337	29.2
470.lbm	55.0	250	78.9	174	<u>55.4</u>	<u>248</u>	55.0	250	78.9	174	<u>55.4</u>	<u>248</u>
481.wrf	274	40.8	<u>268</u>	<u>41.7</u>	264	42.3	274	40.8	<u>268</u>	<u>41.7</u>	264	42.3
482.sphinx3	447	43.6	<u>446</u>	<u>43.7</u>	441	44.2	400	48.8	402	48.4	<u>400</u>	<u>48.7</u>

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'nudev /mnt/hugepages hugetlbfs defaults 0 0' added to /etc/fstab
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

Load Default BIOS Settings and then change the following
Turbo Mode enabled
Turbo Boost set to Traditional
Power C-states enabled
Demand Scrub disabled



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 52.1

IBM BladeCenter HS22 (Intel Xeon E5649)

SPECfp_base2006 = 48.7

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2011

Hardware Availability: Feb-2011

Software Availability: Apr-2011

General Notes

Binaries compiled on RHEL5.5
OMP_NUM_THREADS set to number of cores

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
-ansi-alias

C++ benchmarks:

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 52.1

IBM BladeCenter HS22 (Intel Xeon E5649)

SPECfp_base2006 = 48.7

CPU2006 license: 11

Test date: Jul-2011

Test sponsor: IBM Corporation

Hardware Availability: Feb-2011

Tested by: IBM Corporation

Software Availability: Apr-2011

Base Optimization Flags (Continued)

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

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) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 52.1

IBM BladeCenter HS22 (Intel Xeon E5649)

SPECfp_base2006 = 48.7

CPU2006 license: 11

Test date: Jul-2011

Test sponsor: IBM Corporation

Hardware Availability: Feb-2011

Tested by: IBM Corporation

Software Availability: Apr-2011

Peak Optimization Flags (Continued)

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

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

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

436.cactusADM: basepeak = yes

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

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>
<http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revA.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>
<http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revA.xml>



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 52.1

IBM BladeCenter HS22 (Intel Xeon E5649)

SPECfp_base2006 = 48.7

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2011

Hardware Availability: Feb-2011

Software Availability: Apr-2011

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 23:52:52 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 August 2011.