



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## HITACHI

SPECfp<sup>®</sup>2006 = 39.9

### BladeSymphony BS320 (Intel Xeon E5640)

SPECfp\_base2006 = 37.4

CPU2006 license: 872

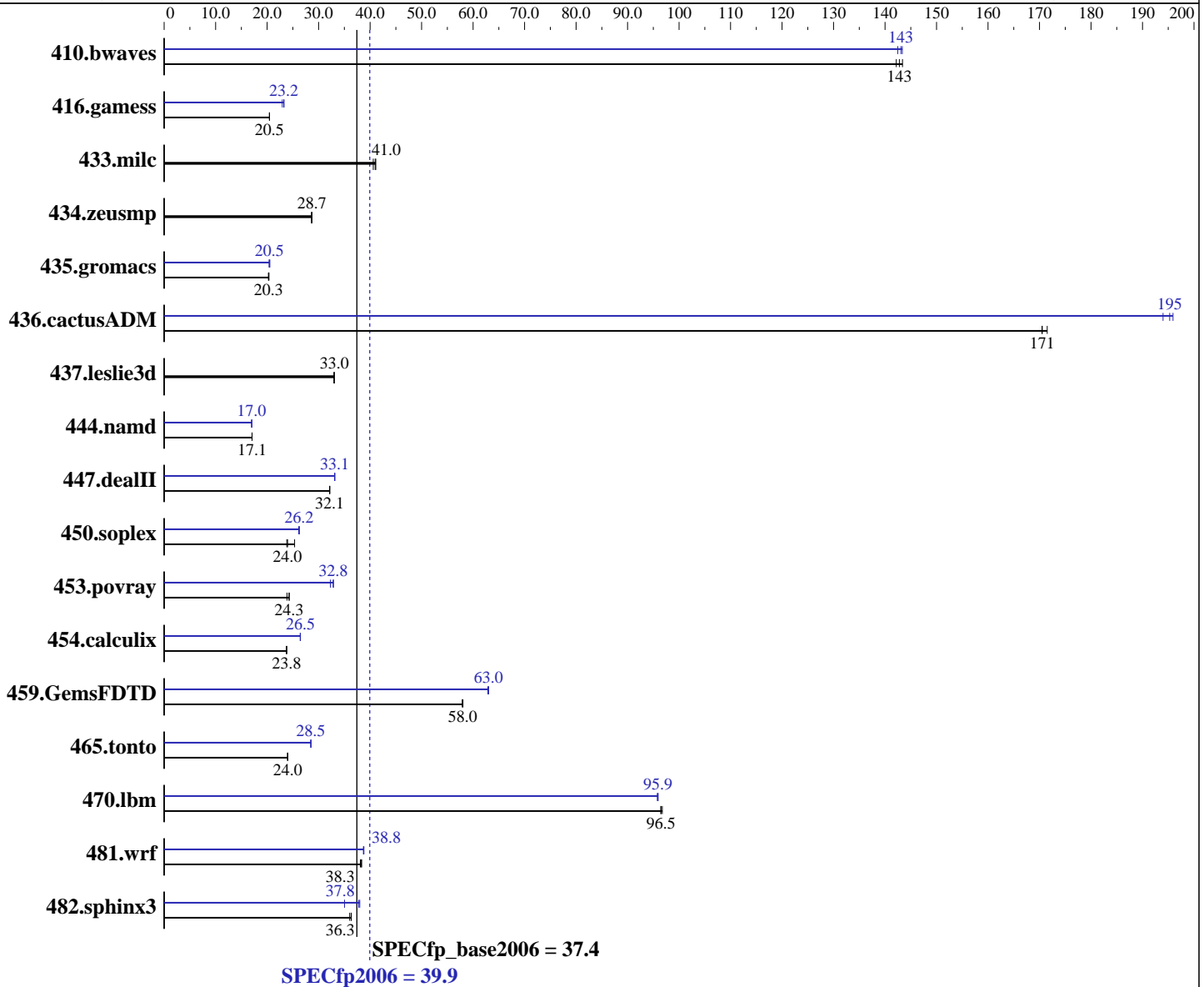
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jul-2010

Hardware Availability: Mar-2010

Software Availability: Dec-2009



### Hardware

CPU Name: Intel Xeon E5640  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 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: 256 KB I+D on chip per core

Continued on next page

### Software

Operating System: Red Hat Enterprise Linux Server release 5.4.3, Advanced Platform, Kernel 2.6.18-164.9.1.el5 on an x86\_64  
 Compiler: Intel C++ Compiler 11.1 for Linux Build 20091012 Package ID: l\_cproc\_p\_11.1.059  
 Intel Fortran Compiler 11.1 for Linux Build 20091012 Package ID: l\_cprof\_p\_11.1.059  
 Auto Parallel: Yes  
 File System: ext3

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## HITACHI

SPECfp2006 = **39.9**

BladeSymphony BS320 (Intel Xeon E5640)

SPECfp\_base2006 = **37.4**

CPU2006 license: 872

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jul-2010

Hardware Availability: Mar-2010

Software Availability: Dec-2009

L3 Cache: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB(6 x 4 GB PC3-10600R,  
 2 rank, CL9-9-9)  
 Disk Subsystem: 1 x 73 GB 10000 rpm SAS  
 Other Hardware: None

System State: Multi-user run level 3  
 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	95.6	142	94.8	143	<b><u>95.2</u></b>	<b><u>143</u></b>	95.4	142	94.8	143	<b><u>95.0</u></b>	<b><u>143</u></b>
416.gamess	<b><u>957</u></b>	<b><u>20.5</u></b>	957	20.5	958	20.4	853	22.9	<b><u>842</u></b>	<b><u>23.2</u></b>	842	23.3
433.milc	223	41.1	<b><u>224</u></b>	<b><u>41.0</u></b>	226	40.6	223	41.1	<b><u>224</u></b>	<b><u>41.0</u></b>	226	40.6
434.zeusmp	<b><u>317</u></b>	<b><u>28.7</u></b>	317	28.7	318	28.6	<b><u>317</u></b>	<b><u>28.7</u></b>	317	28.7	318	28.6
435.gromacs	352	20.3	351	20.4	<b><u>352</u></b>	<b><u>20.3</u></b>	348	20.5	350	20.4	<b><u>349</u></b>	<b><u>20.5</u></b>
436.cactusADM	<b><u>70.1</u></b>	<b><u>171</u></b>	70.1	171	69.7	171	<b><u>61.2</u></b>	<b><u>195</u></b>	61.6	194	61.0	196
437.leslie3d	284	33.0	285	33.0	<b><u>284</u></b>	<b><u>33.0</u></b>	284	33.0	285	33.0	<b><u>284</u></b>	<b><u>33.0</u></b>
444.namd	470	17.1	470	17.1	<b><u>470</u></b>	<b><u>17.1</u></b>	<b><u>472</u></b>	<b><u>17.0</u></b>	472	17.0	471	17.0
447.dealII	356	32.1	<b><u>356</u></b>	<b><u>32.1</u></b>	356	32.2	346	33.1	<b><u>345</u></b>	<b><u>33.1</u></b>	345	33.1
450.soplex	350	23.8	329	25.3	<b><u>348</u></b>	<b><u>24.0</u></b>	<b><u>318</u></b>	<b><u>26.2</u></b>	319	26.1	318	26.3
453.povray	<b><u>219</u></b>	<b><u>24.3</u></b>	223	23.9	219	24.3	162	32.9	165	32.3	<b><u>162</u></b>	<b><u>32.8</u></b>
454.calculix	<b><u>347</u></b>	<b><u>23.8</u></b>	347	23.8	348	23.7	312	26.4	312	26.5	<b><u>312</u></b>	<b><u>26.5</u></b>
459.GemsFDTD	<b><u>183</u></b>	<b><u>58.0</u></b>	183	58.0	183	57.9	168	63.0	169	62.9	<b><u>168</u></b>	<b><u>63.0</u></b>
465.tonto	411	24.0	<b><u>410</u></b>	<b><u>24.0</u></b>	410	24.0	345	28.5	346	28.5	<b><u>345</u></b>	<b><u>28.5</u></b>
470.lbm	142	96.5	142	96.7	<b><u>142</u></b>	<b><u>96.5</u></b>	<b><u>143</u></b>	<b><u>95.9</u></b>	143	95.9	143	95.8
481.wrf	293	38.1	<b><u>292</u></b>	<b><u>38.3</u></b>	291	38.3	289	38.7	<b><u>288</u></b>	<b><u>38.8</u></b>	288	38.8
482.sphinx3	<b><u>537</u></b>	<b><u>36.3</u></b>	541	36.0	536	36.4	556	35.0	513	38.0	<b><u>516</u></b>	<b><u>37.8</u></b>

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  
 OMP\_NUM\_THREADS set to number of cores  
 KMP\_AFFINITY set to granularity=fine,scatter

## Platform Notes

BIOS Settings:  
 Intel HT Technology = Disabled  
 NUMA = Disabled



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**HITACHI**

**SPECfp2006 = 39.9**

**BladeSymphony BS320 (Intel Xeon E5640)**

**SPECfp\_base2006 = 37.4**

**CPU2006 license:** 872

**Test sponsor:** HITACHI

**Tested by:** HITACHI

**Test date:** Jul-2010

**Hardware Availability:** Mar-2010

**Software Availability:** Dec-2009

## 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

Benchmarks using both Fortran and C:

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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**HITACHI**

**SPECfp2006 = 39.9**

**BladeSymphony BS320 (Intel Xeon E5640)**

**SPECfp\_base2006 = 37.4**

**CPU2006 license:** 872

**Test sponsor:** HITACHI

**Tested by:** HITACHI

**Test date:** Jul-2010

**Hardware Availability:** Mar-2010

**Software Availability:** Dec-2009

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## 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  
 470.lbm: -DSPEC\_CPU\_LP64  
 481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

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: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## HITACHI

**SPECfp2006 = 39.9**

**BladeSymphony BS320 (Intel Xeon E5640)**

**SPECfp\_base2006 = 37.4**

**CPU2006 license:** 872

**Test sponsor:** HITACHI

**Tested by:** HITACHI

**Test date:** Jul-2010

**Hardware Availability:** Mar-2010

**Software Availability:** Dec-2009

## Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -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)  
-fno-alias -auto-ilp32

447.dealIII: -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 -ansi-alias -scalar-rep- -auto-ilp32

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

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**HITACHI**

**SPECfp2006 = 39.9**

**BladeSymphony BS320 (Intel Xeon E5640)**

**SPECfp\_base2006 = 37.4**

**CPU2006 license:** 872

**Test sponsor:** HITACHI

**Tested by:** HITACHI

**Test date:** Jul-2010

**Hardware Availability:** Mar-2010

**Software Availability:** Dec-2009

## Peak Optimization Flags (Continued)

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.20100929.03.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.20100929.03.xml>

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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Wed Jul 23 12:59:41 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 28 September 2010.