



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## HITACHI

SPECfp<sup>®</sup>2006 = **76.0**

### Compute Blade 520A (Intel Xeon E5-2470)

SPECfp\_base2006 = **72.2**

CPU2006 license: 35

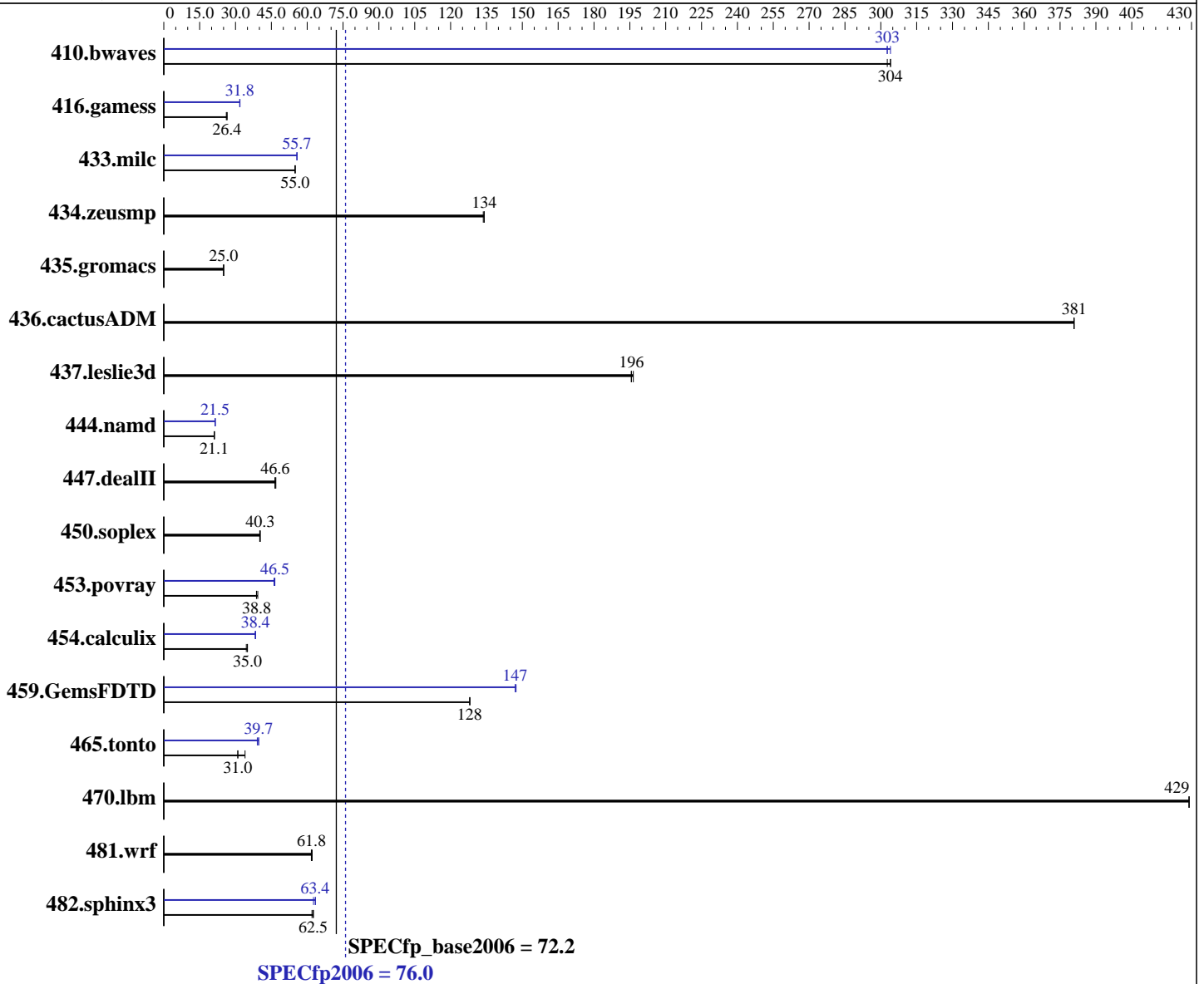
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jun-2012

Hardware Availability: Jun-2012

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E5-2470  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz  
 CPU MHz: 2300  
 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

Continued on next page

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2, Kernel 2.6.32-220.4.2.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## HITACHI

SPECfp2006 = **76.0**

Compute Blade 520A (Intel Xeon E5-2470)

SPECfp\_base2006 = **72.2**

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jun-2012

Hardware Availability: Jun-2012

Software Availability: Feb-2012

L3 Cache: 20 MB I+D on chip per chip  
Other Cache: None  
Memory: 96 GB (12 x 8 GB 2Rx4 PC3L-12800R-11, ECC)  
Disk Subsystem: 2 x 147 GB SAS, 15000 RPM RAID1 configuration  
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	44.7	304	44.9	303	<b>44.7</b>	<b>304</b>	44.9	303	44.7	304	<b>44.9</b>	<b>303</b>
416.gamess	749	26.2	739	26.5	<b>741</b>	<b>26.4</b>	614	31.9	617	31.7	<b>615</b>	<b>31.8</b>
433.milc	167	54.9	<b>167</b>	<b>55.0</b>	167	55.0	165	55.8	<b>165</b>	<b>55.7</b>	165	55.7
434.zeusmp	<b>67.9</b>	<b>134</b>	67.9	134	68.1	134	<b>67.9</b>	<b>134</b>	67.9	134	68.1	134
435.gromacs	<b>285</b>	<b>25.0</b>	285	25.1	286	25.0	<b>285</b>	<b>25.0</b>	285	25.1	286	25.0
436.cactusADM	<b>31.4</b>	<b>381</b>	31.4	381	31.4	381	<b>31.4</b>	<b>381</b>	31.4	381	31.4	381
437.leslie3d	47.8	196	<b>48.0</b>	<b>196</b>	48.1	196	47.8	196	<b>48.0</b>	<b>196</b>	48.1	196
444.namd	379	21.1	<b>379</b>	<b>21.1</b>	379	21.2	373	21.5	373	21.5	<b>373</b>	<b>21.5</b>
447.dealII	246	46.5	244	46.9	<b>245</b>	<b>46.6</b>	246	46.5	244	46.9	<b>245</b>	<b>46.6</b>
450.soplex	208	40.1	<b>207</b>	<b>40.3</b>	207	40.3	208	40.1	<b>207</b>	<b>40.3</b>	207	40.3
453.povray	<b>137</b>	<b>38.8</b>	135	39.3	137	38.8	114	46.5	<b>115</b>	<b>46.5</b>	115	46.1
454.calculix	239	34.5	236	35.0	<b>236</b>	<b>35.0</b>	216	38.2	<b>215</b>	<b>38.4</b>	215	38.4
459.GemsFDTD	82.9	128	<b>82.9</b>	<b>128</b>	82.9	128	<b>72.2</b>	<b>147</b>	72.0	147	72.2	147
465.tonto	<b>317</b>	<b>31.0</b>	289	34.0	318	30.9	<b>248</b>	<b>39.7</b>	252	39.1	248	39.7
470.lbm	<b>32.0</b>	<b>429</b>	32.0	429	32.0	429	<b>32.0</b>	<b>429</b>	32.0	429	32.0	429
481.wrf	180	62.1	181	61.7	<b>181</b>	<b>61.8</b>	180	62.1	181	61.7	<b>181</b>	<b>61.8</b>
482.sphinx3	<b>312</b>	<b>62.5</b>	314	62.0	311	62.6	<b>308</b>	<b>63.4</b>	307	63.4	311	62.6

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

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

Sysinfo program /home/cpu2006/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on localhost.localdomain Fri Jun 1 11:35:17 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo  
model name : Intel(R) Xeon(R) CPU E5-2470 0 @ 2.30GHz  
Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## HITACHI

SPECfp2006 = 76.0

Compute Blade 520A (Intel Xeon E5-2470)

SPECfp\_base2006 = 72.2

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jun-2012

Hardware Availability: Jun-2012

Software Availability: Feb-2012

### Platform Notes (Continued)

2 "physical id"s (chips)  
32 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
cpu cores : 8
siblings  : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB
```

From /proc/meminfo

```
MemTotal:      99043544 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

/usr/bin/lsb\_release -d

Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/\*release\* /etc/\*version\*

```
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

uname -a:

```
Linux localhost.localdomain 2.6.32-220.4.2.el6.x86_64 #1 SMP Mon Feb 6
16:39:28 EST 2012 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Jun 1 10:37

(End of data from sysinfo program)

### General Notes

Environment variables set by runspec before the start of the run:

```
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
OMP_NUM_THREADS = "16"
```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Transparent Huge Pages disabled with:

```
echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

HITACHI BladeSymphony BS520A and HITACHI Compute Blade 520A are electronically equivalent. The results have been measured on a HITACHI BladeSymphony BS520A.



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**HITACHI**

**SPECfp2006 = 76.0**

**Compute Blade 520A (Intel Xeon E5-2470)**

**SPECfp\_base2006 = 72.2**

**CPU2006 license:** 35

**Test sponsor:** HITACHI

**Tested by:** HITACHI

**Test date:** Jun-2012

**Hardware Availability:** Jun-2012

**Software Availability:** Feb-2012

## 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.lelie3d: -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:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**HITACHI**

**SPECfp2006 = 76.0**

**Compute Blade 520A (Intel Xeon E5-2470)**

**SPECfp\_base2006 = 72.2**

**CPU2006 license:** 35

**Test date:** Jun-2012

**Test sponsor:** HITACHI

**Hardware Availability:** Jun-2012

**Tested by:** HITACHI

**Software Availability:** Feb-2012

## 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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

C++ benchmarks:

444.namd: -xAVX(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

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

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

Fortran benchmarks:

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## HITACHI

**SPECfp2006 = 76.0**

Compute Blade 520A (Intel Xeon E5-2470)

**SPECfp\_base2006 = 72.2**

**CPU2006 license:** 35

**Test sponsor:** HITACHI

**Tested by:** HITACHI

**Test date:** Jun-2012

**Hardware Availability:** Jun-2012

**Software Availability:** Feb-2012

## Peak Optimization Flags (Continued)

416.gamess: -xAVX(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: -xAVX(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 -opt-prefetch -parallel

465.tonto: -xAVX(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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.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 v1.2.

Report generated on Thu Jul 24 08:00:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 26 June 2012.