



# SPEC® CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## HITACHI

SPECfp®\_rate2006 = 704

BladeSymphony BS520H (Intel Xeon E5-2660 v3)

SPECfp\_rate\_base2006 = 685

CPU2006 license: 35

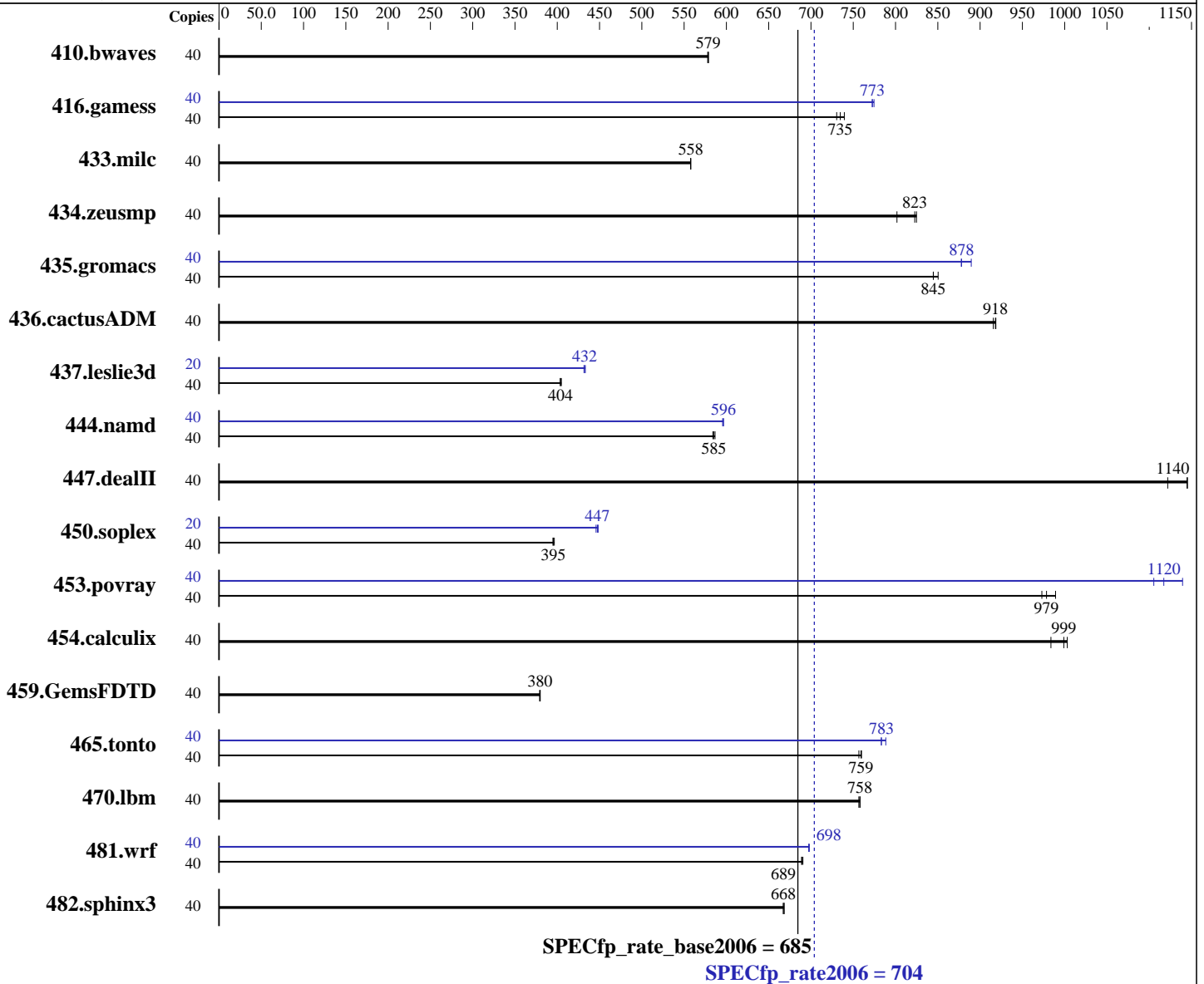
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Dec-2014

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E5-2660 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 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 6.5 (Santiago)  
 2.6.32-431.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## HITACHI

SPECfp\_rate2006 = **704**

BladeSymphony BS520H (Intel Xeon E5-2660 v3)

SPECfp\_rate\_base2006 = **685**

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Dec-2014

Software Availability: Nov-2013

L3 Cache: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 2 x 600 GB SAS, 10000 RPM, RAID1  
 Other Hardware: None

System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: none

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	40	939	579	<b>940</b>	<b>579</b>	941	578	40	939	579	<b>940</b>	<b>579</b>	941	578
416.gamess	40	1059	739	<b>1066</b>	<b>735</b>	1072	730	40	<b>1014</b>	<b>773</b>	1011	775	1014	772
433.milc	40	<b>658</b>	<b>558</b>	658	558	658	558	40	<b>658</b>	<b>558</b>	658	558	658	558
434.zeusmp	40	441	825	454	802	<b>442</b>	<b>823</b>	40	441	825	454	802	<b>442</b>	<b>823</b>
435.gromacs	40	336	850	<b>338</b>	<b>845</b>	338	845	40	<b>325</b>	<b>878</b>	321	890	325	878
436.cactusADM	40	<b>521</b>	<b>918</b>	522	916	520	919	40	<b>521</b>	<b>918</b>	522	916	520	919
437.leslie3d	40	929	405	932	403	<b>931</b>	<b>404</b>	20	434	433	<b>435</b>	<b>432</b>	436	432
444.namd	40	547	587	<b>548</b>	<b>585</b>	549	584	40	538	596	<b>538</b>	<b>596</b>	539	596
447.dealII	40	408	1120	400	1150	<b>400</b>	<b>1140</b>	40	408	1120	400	1150	<b>400</b>	<b>1140</b>
450.soplex	40	845	395	<b>844</b>	<b>395</b>	841	397	20	<b>373</b>	<b>447</b>	374	446	372	448
453.povray	40	219	973	215	989	<b>217</b>	<b>979</b>	40	<b>190</b>	<b>1120</b>	187	1140	193	1110
454.calculix	40	335	984	329	1000	<b>330</b>	<b>999</b>	40	335	984	329	1000	<b>330</b>	<b>999</b>
459.GemsFDTD	40	<b>1118</b>	<b>380</b>	1117	380	1119	379	40	<b>1118</b>	<b>380</b>	1117	380	1119	379
465.tonto	40	520	757	<b>519</b>	<b>759</b>	518	760	40	499	788	<b>502</b>	<b>783</b>	503	783
470.lbm	40	726	757	<b>725</b>	<b>758</b>	725	758	40	726	757	<b>725</b>	<b>758</b>	725	758
481.wrf	40	649	689	647	690	<b>648</b>	<b>689</b>	40	<b>640</b>	<b>698</b>	641	697	640	698
482.sphinx3	40	<b>1167</b>	<b>668</b>	1167	668	1169	667	40	<b>1167</b>	<b>668</b>	1167	668	1169	667

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

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

## Platform Notes

BIOS configuration:  
Patrol Scrub = Disable  
Per Core P-state = Disable

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## HITACHI

SPECfp\_rate2006 = 704

BladeSymphony BS520H (Intel Xeon E5-2660 v3)

SPECfp\_rate\_base2006 = 685

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Dec-2014

Software Availability: Nov-2013

### Platform Notes (Continued)

COD Preferenc = Enable

Sysinfo program /home/speccpu2006/cpu2006/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on 520Hx36564 Fri Jan 23 18:30:20 2015

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 E5-2660 v3 @ 2.60GHz  
2 "physical id"s (chips)  
40 "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 : 10  
siblings : 20  
physical 0: cores 0 1 2 3 4 8 9 10 11 12  
physical 1: cores 0 1 2 3 4 8 9 10 11 12  
cache size : 12800 KB

From /proc/meminfo  
MemTotal: 263989320 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

/usr/bin/lsb\_release -d  
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/\*release\* /etc/\*version\*  
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)  
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)  
system-release-cpe: cpe:/o:redhat:enterprise\_linux:6server:ga:server

uname -a:  
Linux 520Hx36564 2.6.32-431.el6.x86\_64 #1 SMP Sun Nov 10 22:19:54 EST 2013  
x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Jan 23 18:24

SPEC is set to: /home/speccpu2006/cpu2006  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/mapper/vg\_520hx36564-lv\_home ext4 485G 5.5G 455G 2% /home

Additional information from dmidecode:  
BIOS HITACHI 08-20 01/06/2015  
Memory:  
8x NO DIMM Unknown  
16x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## HITACHI

SPECfp\_rate2006 = 704

BladeSymphony BS520H (Intel Xeon E5-2660 v3)

SPECfp\_rate\_base2006 = 685

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Dec-2014

Software Availability: Nov-2013

## Platform Notes (Continued)

(End of data from sysinfo program)

## General Notes

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

LD\_LIBRARY\_PATH = "/home/speccpu2006/cpu2006/libs/32:/home/speccpu2006/cpu2006/libs/64:/home/speccpu2006/cpu2006/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop\_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

BladeSymphony BS520H, Hitachi Compute Blade 520H and BladeSymphony BS2500 HC0A1 are electronically equivalent.

The results have been measured on a Hitachi Compute Blade 520H.

## 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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**HITACHI**

**SPECfp\_rate2006 = 704**

**BladeSymphony BS520H (Intel Xeon E5-2660 v3)**

**SPECfp\_rate\_base2006 = 685**

**CPU2006 license:** 35

**Test sponsor:** HITACHI

**Tested by:** HITACHI

**Test date:** Jan-2015

**Hardware Availability:** Dec-2014

**Software Availability:** Nov-2013

## Base Portability Flags (Continued)

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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
 -ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
 -ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
 -ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks:

icc -m64

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## HITACHI

SPECfp\_rate2006 = 704

BladeSymphony BS520H (Intel Xeon E5-2660 v3)

SPECfp\_rate\_base2006 = 685

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Dec-2014

Software Availability: Nov-2013

## Peak Portability Flags (Continued)

```

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
482.sphinx3: -DSPEC_CPU_LP64

```

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

```

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
         -O3(pass 2) -no-prec-div(pass 2)
         -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
         -auto-ilp32

```

447.dealII: basepeak = yes

```

450.soplex: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
           -O3(pass 2) -no-prec-div(pass 2)
           -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
           -opt-malloc-options=3

```

```

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
           -O3(pass 2) -no-prec-div(pass 2)
           -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -unroll4
           -ansi-alias

```

Fortran benchmarks:

410.bwaves: basepeak = yes

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## HITACHI

SPECfp\_rate2006 = 704

BladeSymphony BS520H (Intel Xeon E5-2660 v3)

SPECfp\_rate\_base2006 = 685

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Dec-2014

Software Availability: Nov-2013

## Peak Optimization Flags (Continued)

416.gamess: -xCORE-AVX2(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-

434.zeusmp: basepeak = yes

437.leslie3d: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4  
-auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2)  
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revC.html>  
<http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.20150127.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revC.xml>  
<http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.20150127.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 Wed Feb 25 11:31:31 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 24 February 2015.