



SPEC® CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

HITACHI

SPECfp®_rate2006 = 787

Compute Blade 520H (Intel Xeon E5-2690 v3)

SPECfp_rate_base2006 = 764

CPU2006 license: 35

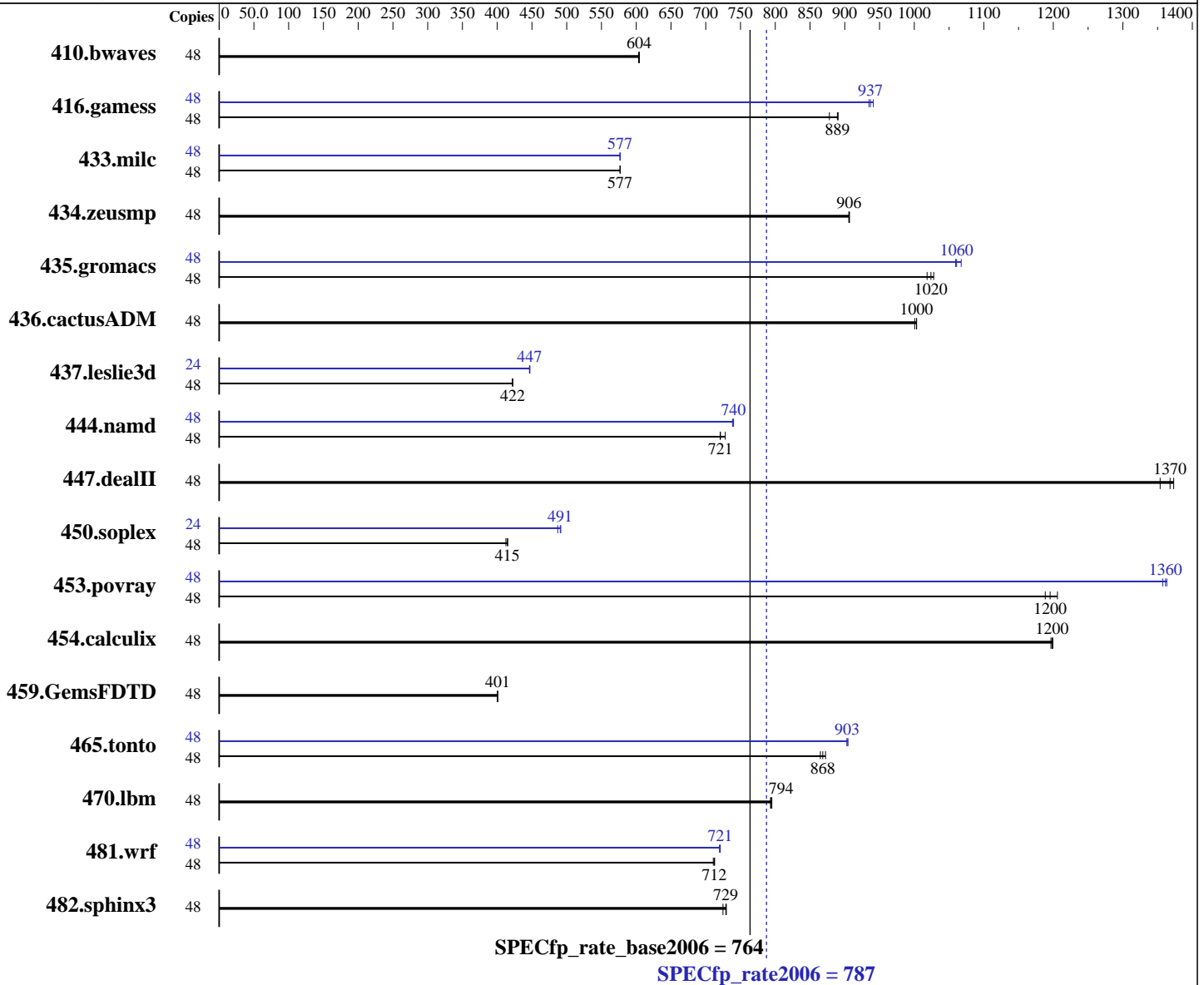
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Sep-2014

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E5-2690 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 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 = 787

Compute Blade 520H (Intel Xeon E5-2690 v3)

SPECfp_rate_base2006 = 764

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Sep-2014

Software Availability: Nov-2013

L3 Cache: 30 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	48	1079	604	<u>1080</u>	<u>604</u>	1081	603	48	1079	604	<u>1080</u>	<u>604</u>	1081	603
416.gamess	48	1055	890	1071	878	<u>1057</u>	<u>889</u>	48	1005	935	999	941	<u>1003</u>	<u>937</u>
433.milc	48	764	577	764	577	<u>764</u>	<u>577</u>	48	<u>764</u>	<u>577</u>	764	577	764	577
434.zeusmp	48	482	907	<u>482</u>	<u>906</u>	482	906	48	482	907	<u>482</u>	<u>906</u>	482	906
435.gromacs	48	333	1030	337	1020	<u>335</u>	<u>1020</u>	48	<u>323</u>	<u>1060</u>	323	1060	321	1070
436.cactusADM	48	573	1000	572	1000	<u>572</u>	<u>1000</u>	48	573	1000	572	1000	<u>572</u>	<u>1000</u>
437.leslie3d	48	1068	423	<u>1069</u>	<u>422</u>	1070	422	24	505	447	<u>505</u>	<u>447</u>	505	446
444.namd	48	529	728	<u>534</u>	<u>721</u>	534	721	48	<u>520</u>	<u>740</u>	521	738	520	740
447.dealII	48	<u>401</u>	<u>1370</u>	406	1350	400	1370	48	<u>401</u>	<u>1370</u>	406	1350	400	1370
450.soplex	48	<u>966</u>	<u>415</u>	964	415	971	412	24	<u>408</u>	<u>491</u>	411	487	407	491
453.povray	48	<u>214</u>	<u>1200</u>	215	1190	212	1210	48	187	1360	<u>188</u>	<u>1360</u>	188	1360
454.calculix	48	331	1200	330	1200	<u>330</u>	<u>1200</u>	48	331	1200	330	1200	<u>330</u>	<u>1200</u>
459.GemsFDTD	48	1271	401	1272	400	<u>1271</u>	<u>401</u>	48	1271	401	1272	400	<u>1271</u>	<u>401</u>
465.tonto	48	541	872	546	865	<u>544</u>	<u>868</u>	48	<u>523</u>	<u>903</u>	522	905	523	903
470.lbm	48	829	795	831	793	<u>831</u>	<u>794</u>	48	829	795	831	793	<u>831</u>	<u>794</u>
481.wrf	48	752	713	<u>753</u>	<u>712</u>	754	711	48	744	721	<u>744</u>	<u>721</u>	745	720
482.sphinx3	48	1282	730	<u>1284</u>	<u>729</u>	1291	725	48	1282	730	<u>1284</u>	<u>729</u>	1291	725

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 = 787

Compute Blade 520H (Intel Xeon E5-2690 v3)

SPECfp_rate_base2006 = 764

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Sep-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 Wed Jan 28 09:50:04 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 E5-2690 v3 @ 2.60GHz
 2 "physical id"s (chips)
 48 "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      : 12
siblings       : 24
physical 0:    cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1:    cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size     : 15360 KB
```

```
From /proc/meminfo
MemTotal:      263988304 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 27 10:40
```

```
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 = 787

Compute Blade 520H (Intel Xeon E5-2690 v3)

SPECfp_rate_base2006 = 764

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Sep-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.deallI: -DSPEC_CPU_LP64

450.soplex: -DSPEC_CPU_LP64

453.povray: -DSPEC_CPU_LP64

454.calculix: -DSPEC_CPU_LP64 -nofor_main

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

HITACHI

SPECfp_rate2006 = 787

Compute Blade 520H (Intel Xeon E5-2690 v3)

SPECfp_rate_base2006 = 764

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Sep-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 = 787

Compute Blade 520H (Intel Xeon E5-2690 v3)

SPECfp_rate_base2006 = 764

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Sep-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: -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)
 -auto-ilp32

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

HITACHI

SPECfp_rate2006 = 787

Compute Blade 520H (Intel Xeon E5-2690 v3)

SPECfp_rate_base2006 = 764

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Sep-2014

Software Availability: Nov-2013

Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

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 CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

HITACHI

SPECfp_rate2006 = 787

Compute Blade 520H (Intel Xeon E5-2690 v3)

SPECfp_rate_base2006 = 764

CPU2006 license: 35

Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jan-2015

Hardware Availability: Sep-2014

Software Availability: Nov-2013

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 v1.2.
Report generated on Wed Feb 25 11:31:50 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 February 2015.