



SPEC® CFP2006 Result

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HITACHI

SPECfp®2006 = **112**

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

SPECfp_base2006 = **108**

CPU2006 license: 35

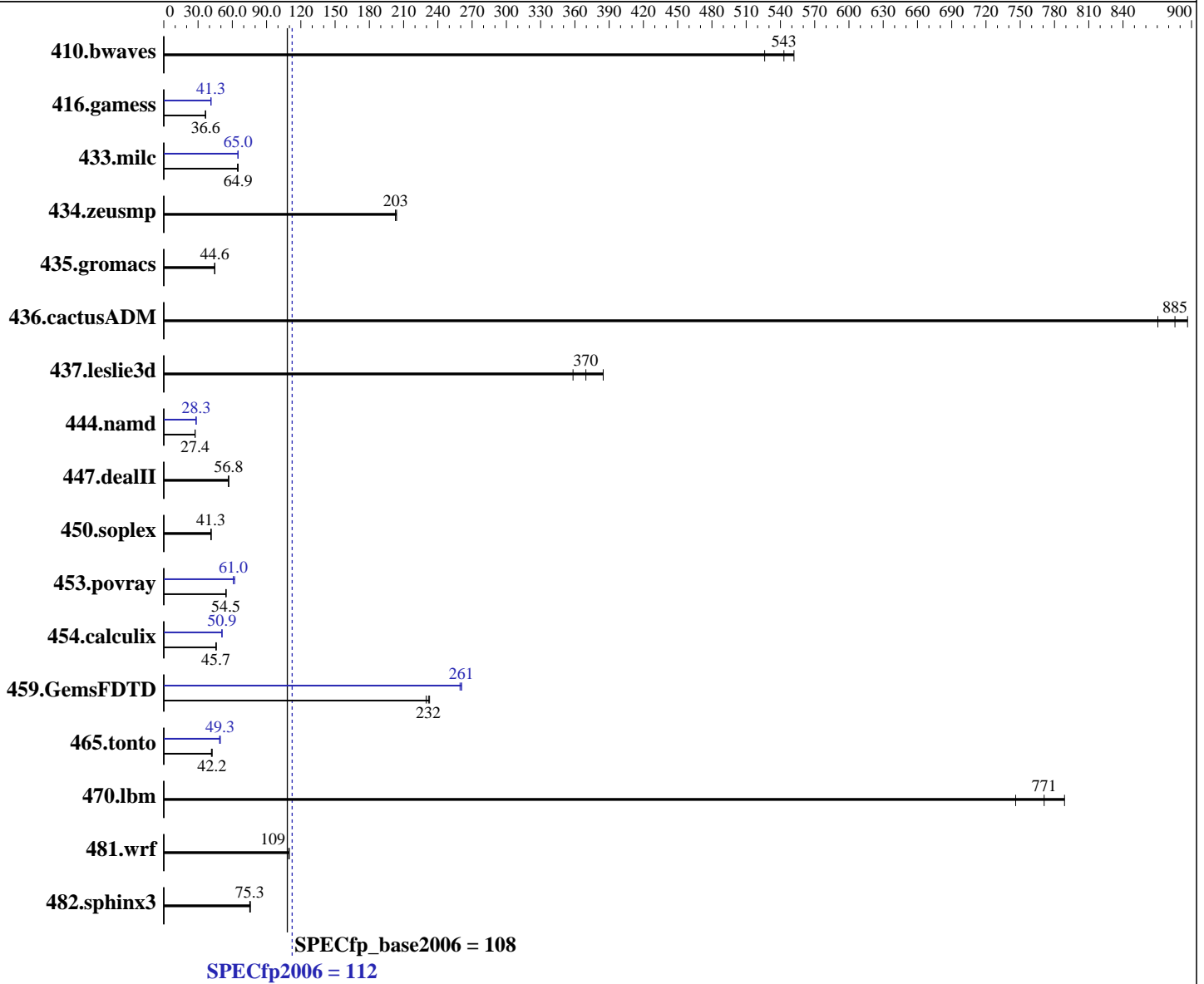
Test sponsor: HITACHI

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: Yes
 File System: ext4

Continued on next page



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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: 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	25.8	526	24.6	552	<u>25.0</u>	<u>543</u>	25.8	526	24.6	552	<u>25.0</u>	<u>543</u>
416.gamess	537	36.5	535	36.6	<u>536</u>	<u>36.6</u>	474	41.3	475	41.2	<u>474</u>	<u>41.3</u>
433.milc	141	65.1	<u>141</u>	<u>64.9</u>	142	64.5	141	65.2	142	64.8	<u>141</u>	<u>65.0</u>
434.zeusmp	<u>44.8</u>	<u>203</u>	44.8	203	44.6	204	<u>44.8</u>	<u>203</u>	44.8	203	44.6	204
435.gromacs	160	44.7	<u>160</u>	<u>44.6</u>	160	44.5	160	44.7	<u>160</u>	<u>44.6</u>	160	44.5
436.cactusADM	13.7	871	13.3	897	<u>13.5</u>	<u>885</u>	13.7	871	13.3	897	<u>13.5</u>	<u>885</u>
437.leslie3d	24.4	385	<u>25.4</u>	<u>370</u>	26.2	358	24.4	385	<u>25.4</u>	<u>370</u>	26.2	358
444.namd	<u>293</u>	<u>27.4</u>	293	27.4	293	27.4	284	28.3	<u>284</u>	<u>28.3</u>	283	28.3
447.dealII	<u>202</u>	<u>56.8</u>	201	56.8	202	56.7	<u>202</u>	<u>56.8</u>	201	56.8	202	56.7
450.soplex	201	41.6	<u>202</u>	<u>41.3</u>	202	41.2	201	41.6	<u>202</u>	<u>41.3</u>	202	41.2
453.povray	97.7	54.5	97.6	54.5	<u>97.6</u>	<u>54.5</u>	<u>87.2</u>	<u>61.0</u>	85.7	62.1	87.4	60.9
454.calculix	179	46.0	<u>180</u>	<u>45.7</u>	180	45.7	<u>162</u>	<u>50.9</u>	162	50.9	162	51.0
459.GemsFDTD	<u>45.8</u>	<u>232</u>	46.2	230	45.6	233	40.9	259	<u>40.7</u>	<u>261</u>	40.7	261
465.tonto	<u>233</u>	<u>42.2</u>	236	41.7	233	42.3	202	48.8	199	49.5	<u>200</u>	<u>49.3</u>
470.lbm	<u>17.8</u>	<u>771</u>	17.4	789	18.4	746	<u>17.8</u>	<u>771</u>	17.4	789	18.4	746
481.wrf	<u>102</u>	<u>109</u>	103	108	102	110	<u>102</u>	<u>109</u>	103	108	102	110
482.sphinx3	257	75.9	259	75.3	<u>259</u>	<u>75.3</u>	257	75.9	259	75.3	<u>259</u>	<u>75.3</u>

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

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

Sysinfo program /home/speccpu2006/cpu2006/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on 520Hx36564 Tue Jan 27 02:39:49 2015

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page



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Platform Notes (Continued)

<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 : 30720 KB

From /proc/meminfo

MemTotal: 263988920 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 26 21:20

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

(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/speccpu2006/cpu2006/libs/32:/home/speccpu2006/cpu2006/libs/64:/home/speccpu2006/cpu2006/sh"

Continued on next page

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General Notes (Continued)

OMP_NUM_THREADS = "24"

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

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
 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



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Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

Continued on next page



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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xCORE-AVX2(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.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(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: 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: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

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)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -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-ic14.0-official-linux64-revC.html>

<http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.20150127.html>



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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>

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