



SPEC[®] CFP2006 Result

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Huawei

SPECfp[®]2006 = 104

Huawei RH2288 V2 (Intel Xeon E5-2680 V2)

SPECfp_base2006 = 99.7

CPU2006 license: 3175

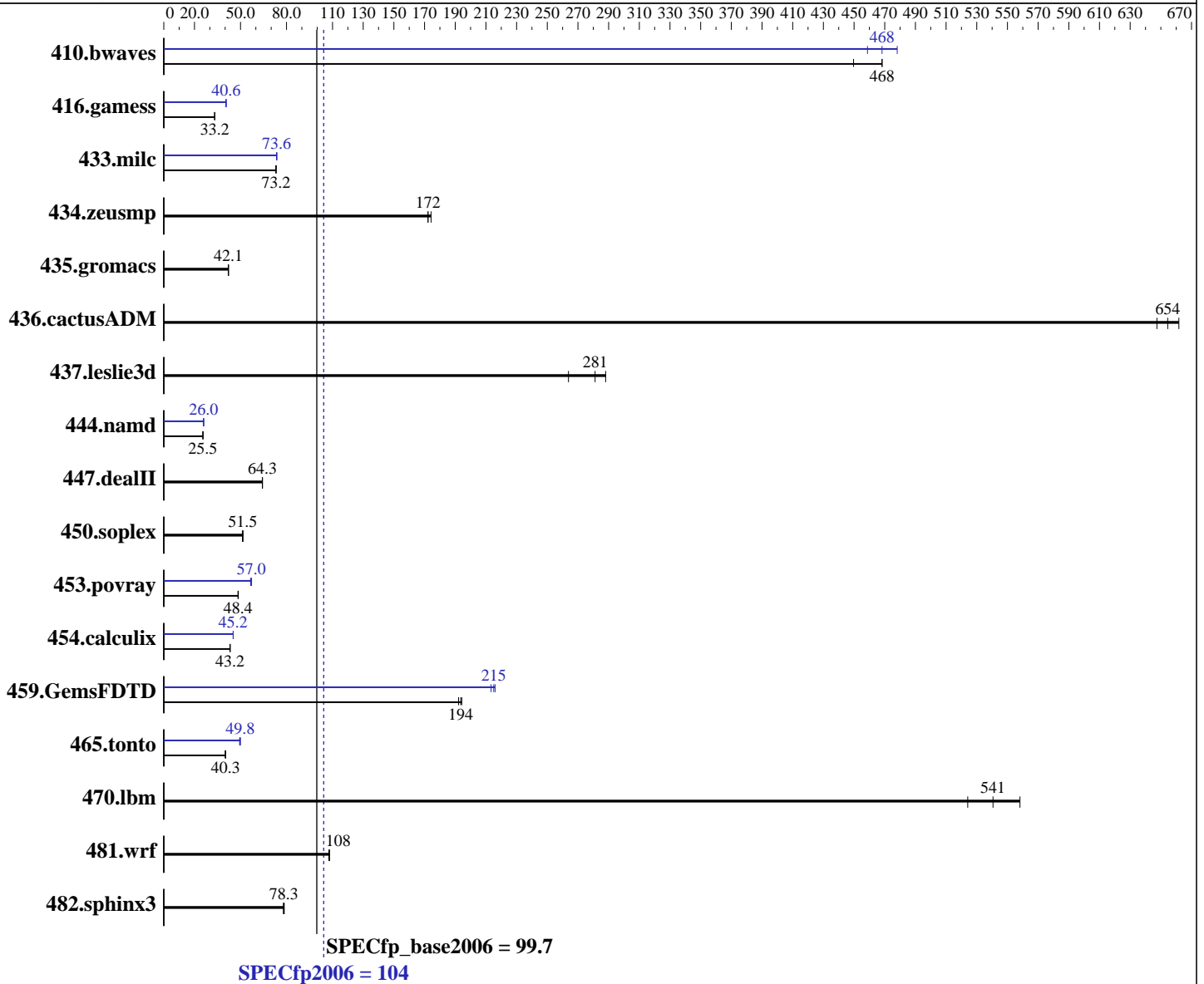
Test date: Apr-2014

Test sponsor: Huawei

Hardware Availability: Sep-2013

Tested by: Huawei

Software Availability: Nov-2013



SPECfp2006 = 104

Hardware

CPU Name: Intel Xeon E5-2680 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 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

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Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 2.6.32-431.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

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L3 Cache: 25 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)
 Disk Subsystem: 1 x 300 GB SAS, 10K RPM
 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	30.2	450	29.0	468	<u>29.0</u>	<u>468</u>	28.4	478	<u>29.0</u>	<u>468</u>	29.6	459
416.gamess	590	33.2	590	33.2	<u>590</u>	<u>33.2</u>	<u>482</u>	<u>40.6</u>	482	40.6	483	40.6
433.milc	126	73.0	<u>125</u>	<u>73.2</u>	125	73.3	125	73.7	<u>125</u>	<u>73.6</u>	125	73.5
434.zeusmp	52.2	174	<u>52.8</u>	<u>172</u>	52.8	172	52.2	174	<u>52.8</u>	<u>172</u>	52.8	172
435.gromacs	169	42.2	<u>170</u>	<u>42.1</u>	170	42.1	169	42.2	<u>170</u>	<u>42.1</u>	170	42.1
436.cactusADM	<u>18.3</u>	<u>654</u>	18.1	662	18.5	647	<u>18.3</u>	<u>654</u>	18.1	662	18.5	647
437.leslie3d	32.6	288	<u>33.4</u>	<u>281</u>	35.6	264	32.6	288	<u>33.4</u>	<u>281</u>	35.6	264
444.namd	314	25.5	314	25.5	<u>314</u>	<u>25.5</u>	309	26.0	<u>309</u>	<u>26.0</u>	309	26.0
447.dealII	178	64.3	<u>178</u>	<u>64.3</u>	178	64.3	178	64.3	<u>178</u>	<u>64.3</u>	178	64.3
450.soplex	162	51.6	163	51.3	<u>162</u>	<u>51.5</u>	162	51.6	163	51.3	<u>162</u>	<u>51.5</u>
453.povray	110	48.4	109	48.6	<u>110</u>	<u>48.4</u>	<u>93.3</u>	<u>57.0</u>	93.0	57.2	94.0	56.6
454.calculix	<u>191</u>	<u>43.2</u>	191	43.2	191	43.2	182	45.2	182	45.3	<u>182</u>	<u>45.2</u>
459.GemsFDTD	<u>54.8</u>	<u>194</u>	54.6	194	55.2	192	<u>49.3</u>	<u>215</u>	49.7	213	49.1	216
465.tonto	246	40.0	<u>244</u>	<u>40.3</u>	244	40.3	<u>198</u>	<u>49.8</u>	197	49.9	199	49.4
470.lbm	26.2	524	<u>25.4</u>	<u>541</u>	24.6	558	26.2	524	<u>25.4</u>	<u>541</u>	24.6	558
481.wrf	<u>103</u>	<u>108</u>	104	108	103	108	<u>103</u>	<u>108</u>	104	108	103	108
482.sphinx3	<u>249</u>	<u>78.3</u>	248	78.5	250	77.9	<u>249</u>	<u>78.3</u>	248	78.5	250	77.9

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 /spec/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on localhost Fri Apr 18 19:15:05 2014

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 E5-2680 v2 @ 2.80GHz
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Platform Notes (Continued)

```

2 "physical id"s (chips)
20 "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  : 10
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 : 25600 KB

From /proc/meminfo
MemTotal:      264478184 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 localhost 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 Apr 18 13:30

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  272G  11G  247G   5% /

Additional information from dmidecode:
Memory:
13x Hynix HMT42GR7AFR4C-RD 16 GB 1867 MHz 2 rank
3x Samsung M393B2G70DB0-CMA 16 GB 1867 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,0,1"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
OMP_NUM_THREADS = "20"

```

Binaries compiled on a system with 2x Xeon X5645 CPU + 16GB memory
using RHEL 6.1
Transparent Huge Pages enabled with:

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General Notes (Continued)

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
The Huawei RH2288H v2 and Huawei RH2288 v2 and
the Huawei RH1288 v2 models are electronically equivalent.
The results have been measured on a Huawei RH2288H v2 model

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:

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

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Base Optimization Flags (Continued)

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

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: basepeak = yes

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

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Peak Optimization Flags (Continued)

447.dealII: 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

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-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml>



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