



SPEC[®] CFP2006 Result

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Huawei
Huawei Tecal RH2285 V2

SPECfp[®]2006 = 72.5

SPECfp_base2006 = 67.9

CPU2006 license: 3175

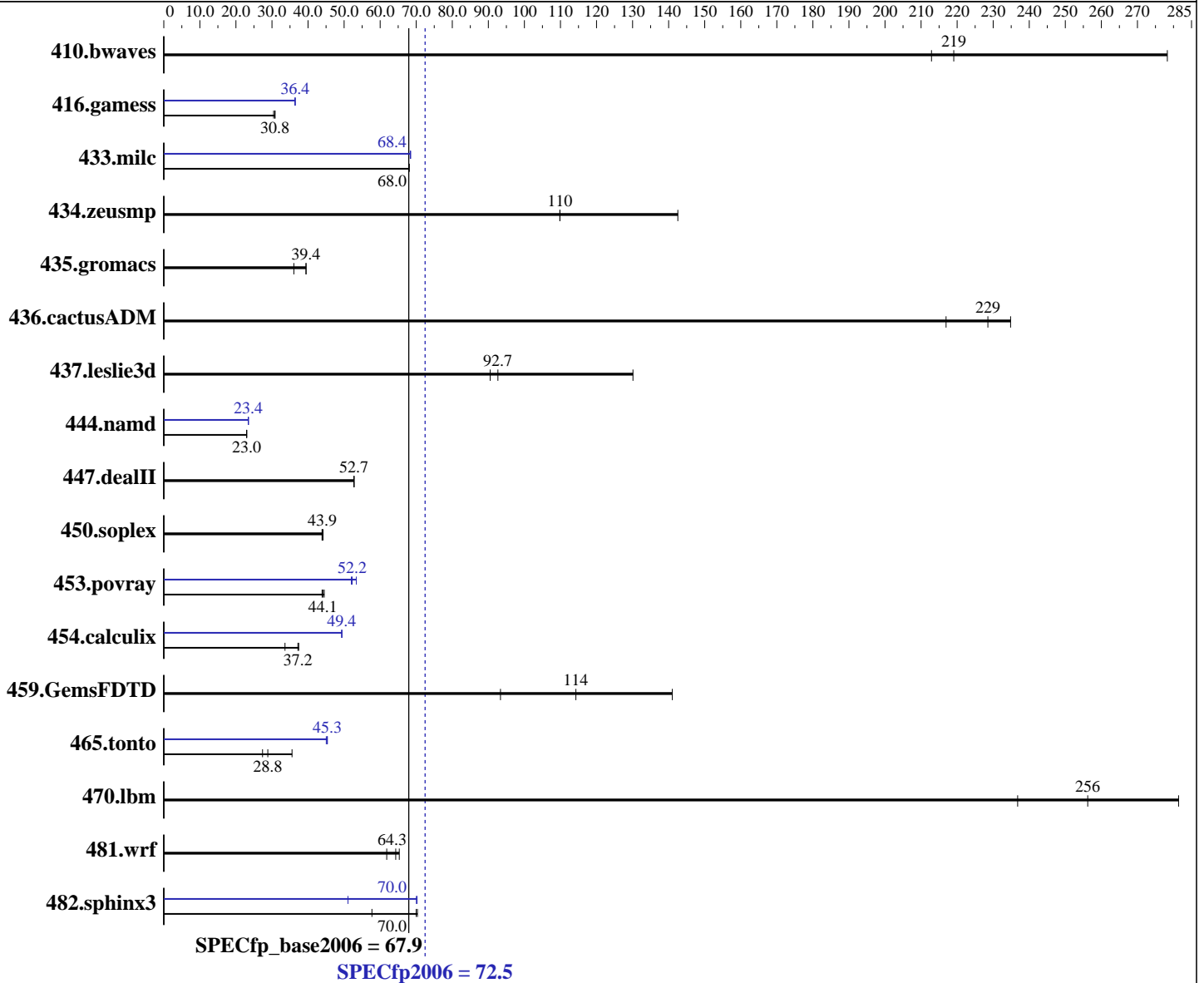
Test sponsor: Huawei

Tested by: Huawei

Test date: Mar-2014

Hardware Availability: Jan-2014

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E5-2450 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
 CPU(s) orderable: 1,2 chip
 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 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

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L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 500 GB SATA, 7200RPM
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	<u>62.0</u>	<u>219</u>	48.8	278	63.8	213	<u>62.0</u>	<u>219</u>	48.8	278	63.8	213
416.gamess	<u>636</u>	<u>30.8</u>	643	30.5	635	30.9	537	36.5	<u>538</u>	<u>36.4</u>	538	36.4
433.milc	135	68.0	<u>135</u>	<u>68.0</u>	135	68.0	<u>134</u>	<u>68.4</u>	134	68.3	134	68.5
434.zeusmp	82.8	110	<u>82.8</u>	<u>110</u>	63.8	143	82.8	110	<u>82.8</u>	<u>110</u>	63.8	143
435.gromacs	<u>181</u>	<u>39.4</u>	181	39.5	198	36.1	<u>181</u>	<u>39.4</u>	181	39.5	198	36.1
436.cactusADM	50.9	235	55.1	217	<u>52.3</u>	<u>229</u>	50.9	235	55.1	217	<u>52.3</u>	<u>229</u>
437.leslie3d	104	90.5	<u>101</u>	<u>92.7</u>	72.2	130	104	90.5	<u>101</u>	<u>92.7</u>	72.2	130
444.namd	349	23.0	349	23.0	<u>349</u>	<u>23.0</u>	342	23.4	<u>342</u>	<u>23.4</u>	342	23.5
447.dealII	217	52.7	217	52.8	<u>217</u>	<u>52.7</u>	217	52.7	217	52.8	<u>217</u>	<u>52.7</u>
450.soplex	<u>190</u>	<u>43.9</u>	190	43.9	189	44.2	<u>190</u>	<u>43.9</u>	190	43.9	189	44.2
453.povray	<u>121</u>	<u>44.1</u>	121	43.9	120	44.5	<u>102</u>	<u>52.2</u>	102	52.0	99.6	53.4
454.calculix	245	33.6	<u>222</u>	<u>37.2</u>	220	37.4	167	49.4	<u>167</u>	<u>49.4</u>	167	49.4
459.GemsFDTD	75.2	141	<u>92.8</u>	<u>114</u>	114	93.4	75.2	141	<u>92.8</u>	<u>114</u>	114	93.4
465.tonto	359	27.4	277	35.6	<u>341</u>	<u>28.8</u>	217	45.4	<u>217</u>	<u>45.3</u>	218	45.0
470.lbm	<u>53.6</u>	<u>256</u>	48.8	281	58.0	237	<u>53.6</u>	<u>256</u>	48.8	281	58.0	237
481.wrf	<u>174</u>	<u>64.3</u>	171	65.3	181	61.8	<u>174</u>	<u>64.3</u>	171	65.3	181	61.8
482.sphinx3	338	57.7	<u>278</u>	<u>70.0</u>	277	70.3	<u>277</u>	<u>70.2</u>	382	51.1	<u>278</u>	<u>70.0</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:
Set Power Efficiency Mode to Performance
Sysinfo program /spec/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Mon Mar 31 07:24:34 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>

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Platform Notes (Continued)

```

From /proc/cpuinfo
model name      : Intel(R) Xeon(R) CPU E5-2450 v2 @ 2.50GHz
 2 "physical id"s (chips)
 16 "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     : 8
  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:      99010156 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.localdomain 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 Mar 31 01:27

SPEC is set to: /spec
Filesystem                                Type
Size Used Avail Use% Mounted on
/dev/mapper/ddf1_4c534920202020201000006019e5d2034711471157d3ceb3p2 ext4
260G  68G 179G  28% /

Additional information from dmidecode:
BIOS Insyde Corp. RMIBV365 09/06/2013
Memory:
 12x Micron 36JSF1G72PZ-1G6K1 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)

```

General Notes

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

```

LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"
OMP_NUM_THREADS = "16"

```

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General Notes (Continued)

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>
The Huawei RH2285H v2 and Huawei RH2285 v2 models are electronically equivalent.
The results have been measured on a Huawei RH2285H 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.deallI: -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:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xAVX -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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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Peak Optimization Flags (Continued)

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: basepeak = yes

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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

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-ic14.0-official-linux64.20140128.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-ic14.0-official-linux64.20140128.xml>
<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml>



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For other inquiries, please contact webmaster@spec.org.

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