



SPEC[®] CFP2006 Result

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Huawei

SPECfp[®]2006 = 96.1

Huawei E9000 CH121 (Intel Xeon E5-2690)

SPECfp_base2006 = 92.3

CPU2006 license: 3175

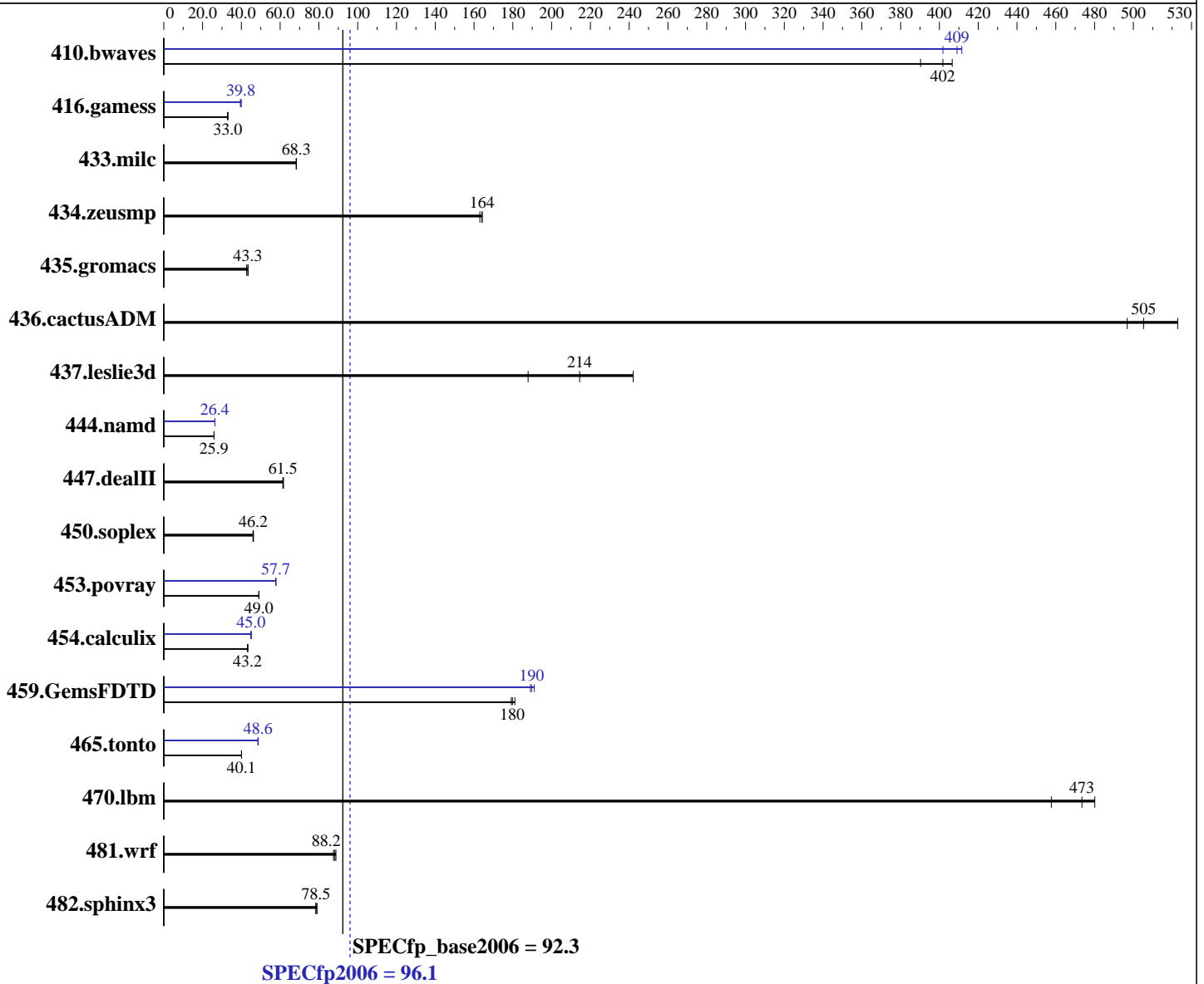
Test date: Jul-2013

Test sponsor: Huawei

Hardware Availability: Jun-2013

Tested by: Huawei

Software Availability: Feb-2013



Hardware

CPU Name: Intel Xeon E5-2690
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
 CPU MHz: 2900
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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 6.4 (Santiago)
 2.6.32-358.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: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, 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 | 34.8 | 390 | <u>33.8</u> | <u>402</u> | 33.4 | 407 | 33.0 | 412 | 33.8 | 402 | <u>33.2</u> | <u>409</u> |
| 416.gamess | 593 | 33.0 | 595 | 32.9 | <u>593</u> | <u>33.0</u> | 496 | 39.5 | <u>492</u> | <u>39.8</u> | 490 | 39.9 |
| 433.milc | 134 | 68.4 | <u>134</u> | <u>68.3</u> | 134 | 68.3 | 134 | 68.4 | <u>134</u> | <u>68.3</u> | 134 | 68.3 |
| 434.zeusmp | 55.4 | 164 | 55.8 | 163 | <u>55.4</u> | <u>164</u> | 55.4 | 164 | 55.8 | 163 | <u>55.4</u> | <u>164</u> |
| 435.gromacs | 164 | 43.5 | <u>165</u> | <u>43.3</u> | 167 | 42.7 | 164 | 43.5 | <u>165</u> | <u>43.3</u> | 167 | 42.7 |
| 436.cactusADM | 22.9 | 523 | 24.1 | 497 | <u>23.7</u> | <u>505</u> | 22.9 | 523 | 24.1 | 497 | <u>23.7</u> | <u>505</u> |
| 437.leslie3d | 38.8 | 242 | <u>43.8</u> | <u>214</u> | 50.0 | 188 | 38.8 | 242 | <u>43.8</u> | <u>214</u> | 50.0 | 188 |
| 444.namd | 309 | 25.9 | <u>309</u> | <u>25.9</u> | 309 | 25.9 | 304 | 26.4 | <u>304</u> | <u>26.4</u> | 304 | 26.4 |
| 447.dealII | 185 | 61.7 | <u>186</u> | <u>61.5</u> | 186 | 61.4 | 185 | 61.7 | <u>186</u> | <u>61.5</u> | 186 | 61.4 |
| 450.soplex | 181 | 46.2 | 181 | 46.0 | <u>181</u> | <u>46.2</u> | 181 | 46.2 | 181 | 46.0 | <u>181</u> | <u>46.2</u> |
| 453.povray | 108 | 49.1 | <u>108</u> | <u>49.0</u> | 109 | 49.0 | 92.3 | 57.7 | 91.9 | 57.9 | <u>92.2</u> | <u>57.7</u> |
| 454.calculix | 190 | 43.4 | <u>191</u> | <u>43.2</u> | 191 | 43.2 | 183 | 45.2 | <u>183</u> | <u>45.0</u> | 184 | 44.9 |
| 459.GemsFDTD | <u>59.0</u> | <u>180</u> | 58.6 | 181 | 59.2 | 179 | <u>55.9</u> | <u>190</u> | 56.1 | 189 | 55.5 | 191 |
| 465.tonto | 246 | 40.0 | <u>246</u> | <u>40.1</u> | 245 | 40.1 | 202 | 48.7 | 203 | 48.6 | <u>203</u> | <u>48.6</u> |
| 470.lbm | 28.6 | 480 | 30.0 | 458 | <u>29.0</u> | <u>473</u> | 28.6 | 480 | 30.0 | 458 | <u>29.0</u> | <u>473</u> |
| 481.wrf | 126 | 88.8 | <u>127</u> | <u>88.2</u> | 128 | 87.5 | 126 | 88.8 | <u>127</u> | <u>88.2</u> | 128 | 87.5 |
| 482.sphinx3 | 247 | 79.0 | <u>248</u> | <u>78.5</u> | 249 | 78.4 | 247 | 79.0 | <u>248</u> | <u>78.5</u> | 249 | 78.4 |

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 speccpu Thu Jul 11 18:50:36 2013

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 0 @ 2.90GHz
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Platform Notes (Continued)

```

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:      132117844 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux speccpu 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jul 11 13:25

SPEC is set to: /spec
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/ddf1_4c534920202020201000005b19e5d20447114711f8bdfdbdp1
                ext4      241G   75G  154G  33% /

Additional information from dmidecode:

(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 = "16"

```

Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled



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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

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



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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: basepeak = yes

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

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: -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

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Software Availability: Feb-2013

Peak Optimization Flags (Continued)

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-revE.20121120.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-revE.20121120.xml>

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

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