



# SPEC® CFP2006 Result

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## Huawei

SPECfp®2006 = **88.4**

Huawei RH1288 V2 (Intel Xeon E5-2670 2.60 GHz)

SPECfp\_base2006 = **85.3**

CPU2006 license: 3175

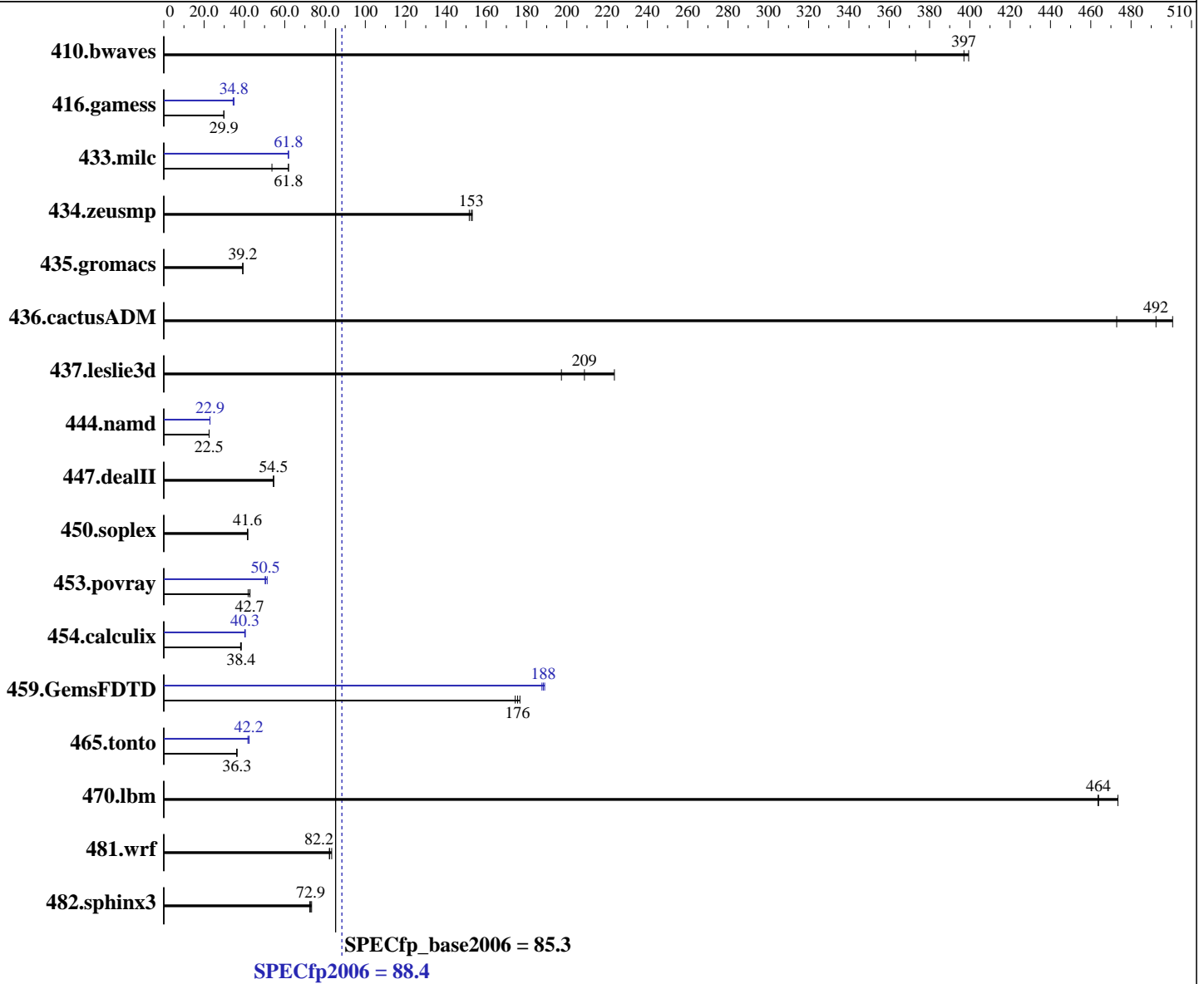
Test date: May-2013

Test sponsor: Huawei

Hardware Availability: May-2012

Tested by: Huawei

Software Availability: Feb-2013



**Hardware**

CPU Name: Intel Xeon E5-2670  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2600  
 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 6.4 (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 500 GB SATA, 7200 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	36.4	373	34.0	399	<b><u>34.2</u></b>	<b><u>397</u></b>	36.4	373	34.0	399	<b><u>34.2</u></b>	<b><u>397</u></b>
416.gamess	655	29.9	<b><u>656</u></b>	<b><u>29.9</u></b>	658	29.8	<b><u>563</u></b>	<b><u>34.8</u></b>	562	34.8	569	34.4
433.milc	148	61.9	171	53.7	<b><u>148</u></b>	<b><u>61.8</u></b>	149	61.8	148	61.9	<b><u>148</u></b>	<b><u>61.8</u></b>
434.zeusmp	<b><u>59.6</u></b>	<b><u>153</u></b>	59.4	153	60.0	152	<b><u>59.6</u></b>	<b><u>153</u></b>	59.4	153	60.0	152
435.gromacs	<b><u>182</u></b>	<b><u>39.2</u></b>	182	39.2	182	39.2	<b><u>182</u></b>	<b><u>39.2</u></b>	182	39.2	182	39.2
436.cactusADM	<b><u>24.3</u></b>	<b><u>492</u></b>	23.9	501	25.3	473	<b><u>24.3</u></b>	<b><u>492</u></b>	23.9	501	25.3	473
437.leslie3d	47.6	197	42.0	224	<b><u>45.0</u></b>	<b><u>209</u></b>	47.6	197	42.0	224	<b><u>45.0</u></b>	<b><u>209</u></b>
444.namd	357	22.5	357	22.5	<b><u>357</u></b>	<b><u>22.5</u></b>	350	22.9	350	22.9	<b><u>350</u></b>	<b><u>22.9</u></b>
447.dealII	210	54.4	210	54.5	<b><u>210</u></b>	<b><u>54.5</u></b>	210	54.4	210	54.5	<b><u>210</u></b>	<b><u>54.5</u></b>
450.soplex	200	41.6	201	41.6	<b><u>201</u></b>	<b><u>41.6</u></b>	200	41.6	201	41.6	<b><u>201</u></b>	<b><u>41.6</u></b>
453.povray	124	42.8	<b><u>125</u></b>	<b><u>42.7</u></b>	127	41.8	104	51.3	<b><u>105</u></b>	<b><u>50.5</u></b>	106	50.3
454.calculix	217	38.1	215	38.4	<b><u>215</u></b>	<b><u>38.4</u></b>	204	40.5	205	40.2	<b><u>205</u></b>	<b><u>40.3</u></b>
459.GemsFDTD	<b><u>60.4</u></b>	<b><u>176</u></b>	60.8	174	60.0	177	56.1	189	56.5	188	<b><u>56.3</u></b>	<b><u>188</u></b>
465.tonto	271	36.3	272	36.2	<b><u>271</u></b>	<b><u>36.3</u></b>	232	42.4	236	41.7	<b><u>233</u></b>	<b><u>42.2</u></b>
470.lbm	29.0	473	<b><u>29.6</u></b>	<b><u>464</u></b>	29.6	464	29.0	473	<b><u>29.6</u></b>	<b><u>464</u></b>	29.6	464
481.wrf	<b><u>136</u></b>	<b><u>82.2</u></b>	134	83.3	136	82.2	<b><u>136</u></b>	<b><u>82.2</u></b>	134	83.3	136	82.2
482.sphinx3	266	73.3	269	72.4	<b><u>267</u></b>	<b><u>72.9</u></b>	266	73.3	269	72.4	<b><u>267</u></b>	<b><u>72.9</u></b>

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"  
 Transparent Huge Pages enabled with:  
 Select only test related files when installing the operating system

## Platform Notes

BIOS configuration:  
 Set Power Efficiency Mode to Performance  
 Baseboard Management Controller used to adjust the fan speed to 100%  
 Intel Hyper Threading Technology = Disable  
 Sysinfo program /spec/config/sysinfo.rev6800  
 \$Rev: 6800 \$ \$Date:: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3  
 running on localhost Fri May 17 23:13:32 2013

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**Test date:** May-2013

**Hardware Availability:** May-2012

**Software Availability:** Feb-2013

### Platform Notes (Continued)

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 E5-2670 0 @ 2.60GHz
 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 localhost 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 May 17 17:11

```

SPEC is set to: /spec
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda2       ext4      193G  48G  135G  27% /

```

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"

```

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## General Notes (Continued)

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

## 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: 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- -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-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](mailto:webmaster@spec.org).

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