





# SPEC CFP2006 Result

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## Huawei

SPECfp2006 = **64.8**

Huawei RH2285H V2 (Intel Xeon E5-2450L v2)

SPECfp\_base2006 = **62.4**

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jul-2014

Hardware Availability: Mar-2014

Software Availability: Nov-2013

L3 Cache: 25 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 600 GB SAS, 10000 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    | <b>43.8</b> | <b>310</b>  | 43.0        | 316         | 44.2        | 307        | <b>42.6</b> | <b>319</b>  | 42.2        | 322         | 44.0        | 309         |
| 416.gamess    | <b>980</b>  | <b>20.0</b> | 979         | 20.0        | 980         | 20.0       | <b>840</b>  | <b>23.3</b> | 839         | 23.3        | 840         | 23.3        |
| 433.milc      | 197         | 46.7        | <b>197</b>  | <b>46.7</b> | 197         | 46.6       | 195         | 47.1        | <b>195</b>  | <b>47.1</b> | 195         | 47.0        |
| 434.zeusmp    | 78.2        | 116         | <b>78.2</b> | <b>116</b>  | 78.4        | 116        | 78.2        | 116         | <b>78.2</b> | <b>116</b>  | 78.4        | 116         |
| 435.gromacs   | <b>280</b>  | <b>25.5</b> | 280         | 25.5        | 280         | 25.5       | <b>280</b>  | <b>25.5</b> | 280         | 25.5        | 280         | 25.5        |
| 436.cactusADM | 29.6        | 404         | <b>30.0</b> | <b>399</b>  | 30.2        | 396        | 29.6        | 404         | <b>30.0</b> | <b>399</b>  | 30.2        | 396         |
| 437.leslie3d  | 52.4        | 179         | <b>51.6</b> | <b>182</b>  | 50.8        | 185        | 52.4        | 179         | <b>51.6</b> | <b>182</b>  | 50.8        | 185         |
| 444.namd      | 546         | 14.7        | <b>546</b>  | <b>14.7</b> | 546         | 14.7       | 537         | 14.9        | 537         | 14.9        | <b>537</b>  | <b>14.9</b> |
| 447.dealII    | 302         | 37.8        | <b>303</b>  | <b>37.8</b> | 303         | 37.8       | 302         | 37.8        | <b>303</b>  | <b>37.8</b> | 303         | 37.8        |
| 450.soplex    | <b>268</b>  | <b>31.2</b> | 268         | 31.2        | 267         | 31.3       | <b>268</b>  | <b>31.2</b> | 268         | 31.2        | 267         | 31.3        |
| 453.povray    | <b>192</b>  | <b>27.7</b> | 192         | 27.7        | 193         | 27.6       | <b>162</b>  | <b>32.8</b> | 161         | 33.0        | 162         | 32.7        |
| 454.calculix  | 322         | 25.7        | <b>321</b>  | <b>25.7</b> | 321         | 25.7       | <b>315</b>  | <b>26.2</b> | 315         | 26.2        | 315         | 26.2        |
| 459.GemsFDTD  | 79.6        | 133         | 78.8        | 135         | <b>79.4</b> | <b>134</b> | 73.6        | 144         | <b>73.4</b> | <b>145</b>  | 72.4        | 147         |
| 465.tonto     | <b>405</b>  | <b>24.3</b> | 405         | 24.3        | 406         | 24.3       | 343         | 28.7        | <b>343</b>  | <b>28.7</b> | 343         | 28.7        |
| 470.lbm       | 33.4        | 411         | 33.2        | 414         | <b>33.4</b> | <b>411</b> | 33.4        | 411         | 33.2        | 414         | <b>33.4</b> | <b>411</b>  |
| 481.wrf       | 163         | 68.4        | <b>163</b>  | <b>68.4</b> | 163         | 68.4       | 163         | 68.4        | <b>163</b>  | <b>68.4</b> | 163         | 68.4        |
| 482.sphinx3   | <b>408</b>  | <b>47.7</b> | 409         | 47.7        | 407         | 47.9       | <b>408</b>  | <b>47.7</b> | 409         | 47.7        | 407         | 47.9        |

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

BIOS configuration:  
Set Intel HT Technology Disable  
Sysinfo program /spec/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on localhost.localdomain Wed Jul 2 18:27:33 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 E5-2450L v2 @ 1.70GHz
 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:      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 Jul 2 09:40

SPEC is set to: /spec
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2       ext4     540G     111G   402G   22% /

Additional information from dmidecode:
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:

```

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 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1

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## General Notes (Continued)

Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
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.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-linux64.20120912.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-linux64.20120912.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](mailto:webmaster@spec.org).

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