



# SPEC<sup>®</sup> CFP2006 Result

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## Huawei

SPECfp<sup>®</sup>2006 = **76.6**

### Huawei RH1288 V2 (Intel Xeon E5-2640)

SPECfp\_base2006 = **74.2**

CPU2006 license: 3175

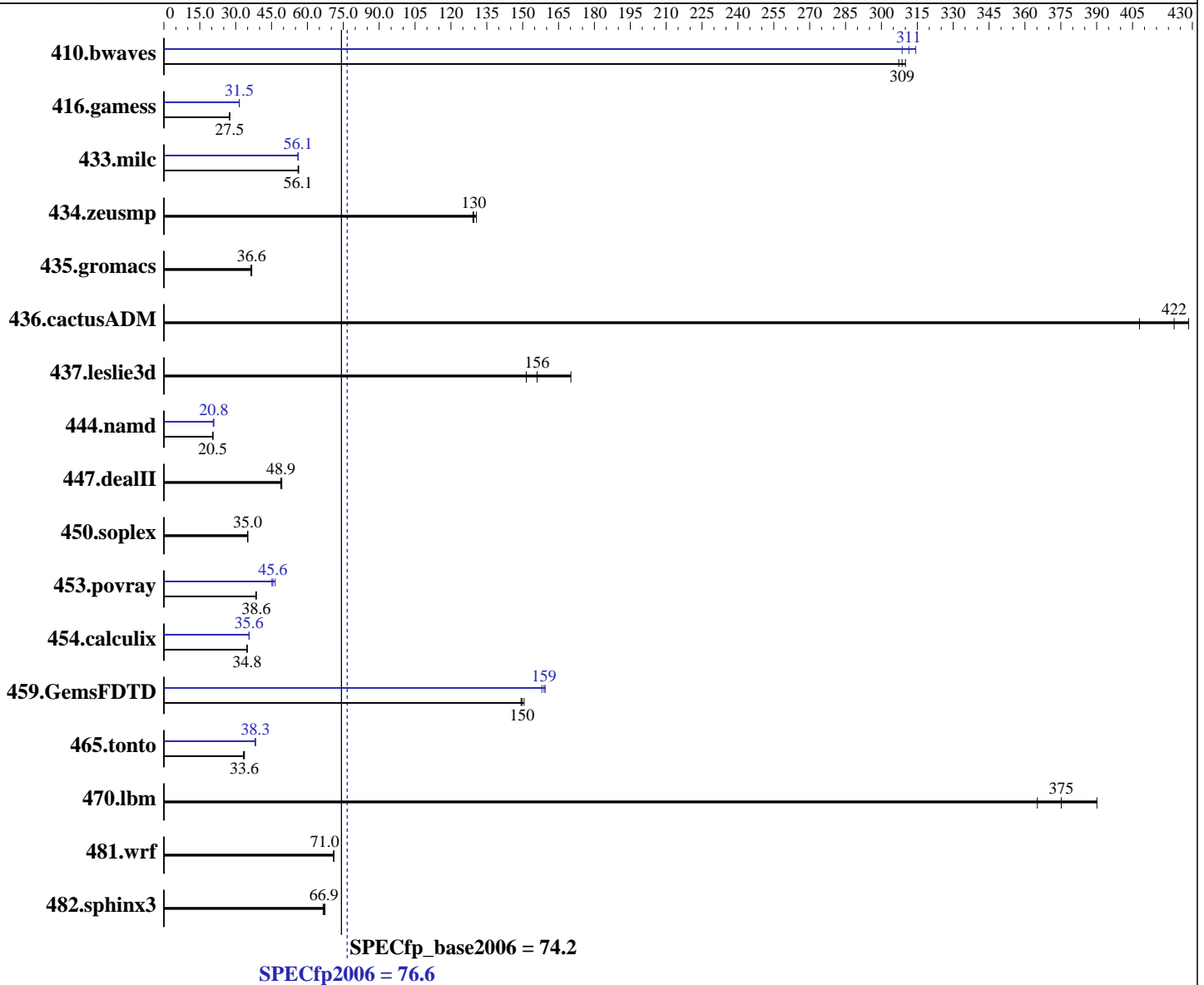
Test sponsor: Huawei

Tested by: Huawei

Test date: Aug-2014

Hardware Availability: Mar-2012

Software Availability: Nov-2013



Hardware	
CPU Name:	Intel Xeon E5-2640
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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 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

Continued on next page



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L3 Cache: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 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	44.2	307	<b>44.0</b>	<b>309</b>	43.8	310	44.0	309	43.2	314	<b>43.6</b>	<b>311</b>
416.gamess	<b>713</b>	<b>27.5</b>	714	27.4	711	27.5	621	31.5	621	31.5	<b>621</b>	<b>31.5</b>
433.milc	163	56.4	<b>163</b>	<b>56.1</b>	164	56.1	164	56.0	163	56.2	<b>164</b>	<b>56.1</b>
434.zeusmp	69.6	131	<b>70.2</b>	<b>130</b>	70.4	129	69.6	131	<b>70.2</b>	<b>130</b>	70.4	129
435.gromacs	194	36.7	<b>195</b>	<b>36.6</b>	196	36.4	194	36.7	<b>195</b>	<b>36.6</b>	196	36.4
436.cactusADM	29.3	408	<b>28.3</b>	<b>422</b>	27.9	428	29.3	408	<b>28.3</b>	<b>422</b>	27.9	428
437.leslie3d	55.2	170	<b>60.2</b>	<b>156</b>	62.0	152	55.2	170	<b>60.2</b>	<b>156</b>	62.0	152
444.namd	392	20.5	<b>392</b>	<b>20.5</b>	392	20.5	385	20.8	389	20.6	<b>385</b>	<b>20.8</b>
447.dealII	234	48.9	<b>234</b>	<b>48.9</b>	232	49.3	234	48.9	<b>234</b>	<b>48.9</b>	232	49.3
450.soplex	238	35.1	<b>238</b>	<b>35.0</b>	239	35.0	238	35.1	<b>238</b>	<b>35.0</b>	239	35.0
453.povray	<b>138</b>	<b>38.6</b>	138	38.6	138	38.4	118	45.2	<b>117</b>	<b>45.6</b>	114	46.5
454.calculix	238	34.7	237	34.8	<b>237</b>	<b>34.8</b>	232	35.6	<b>232</b>	<b>35.6</b>	232	35.6
459.GemsFDTD	71.1	149	70.5	151	<b>70.9</b>	<b>150</b>	<b>66.8</b>	<b>159</b>	67.2	158	66.6	159
465.tonto	296	33.2	293	33.6	<b>293</b>	<b>33.6</b>	<b>257</b>	<b>38.3</b>	258	38.1	257	38.3
470.lbm	35.2	390	<b>36.6</b>	<b>375</b>	37.6	365	35.2	390	<b>36.6</b>	<b>375</b>	37.6	365
481.wrf	157	71.0	<b>157</b>	<b>71.0</b>	157	71.0	157	71.0	<b>157</b>	<b>71.0</b>	157	71.0
482.sphinx3	<b>291</b>	<b>66.9</b>	293	66.6	289	67.3	<b>291</b>	<b>66.9</b>	293	66.6	289	67.3

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 Custom  
 Set Hyper-Threading to Disabled  
 Baseboard Management Controller used to adjust the fan speed to 100%  
 Sysinfo program /spec/config/sysinfo.rev6800  
 \$Rev: 6800 \$ \$Date:: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3  
 running on SPECCPU Sat Aug 9 09:56:23 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

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## Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2640 0 @ 2.50GHz
    2 "physical id"s (chips)
    12 "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 : 6
    siblings  : 6
    physical 0: cores 0 1 2 3 4 5
    physical 1: cores 0 1 2 3 4 5
  cache size : 15360 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 SPEC CPU 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 Aug 9 03:13

```

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  543G   87G  428G  17% /

```

Additional information from dmidecode:

```

Memory:
  16x Hynix HMT42GR7MFR4C-PB 16 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 = "12"

```

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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: -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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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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