



# SPEC<sup>®</sup> CFP2006 Result

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## Huawei

SPECfp<sup>®</sup>2006 = **85.6**

### Huawei RH2288 V2 (Intel Xeon E5-2665)

SPECfp\_base2006 = **81.7**

CPU2006 license: 3175

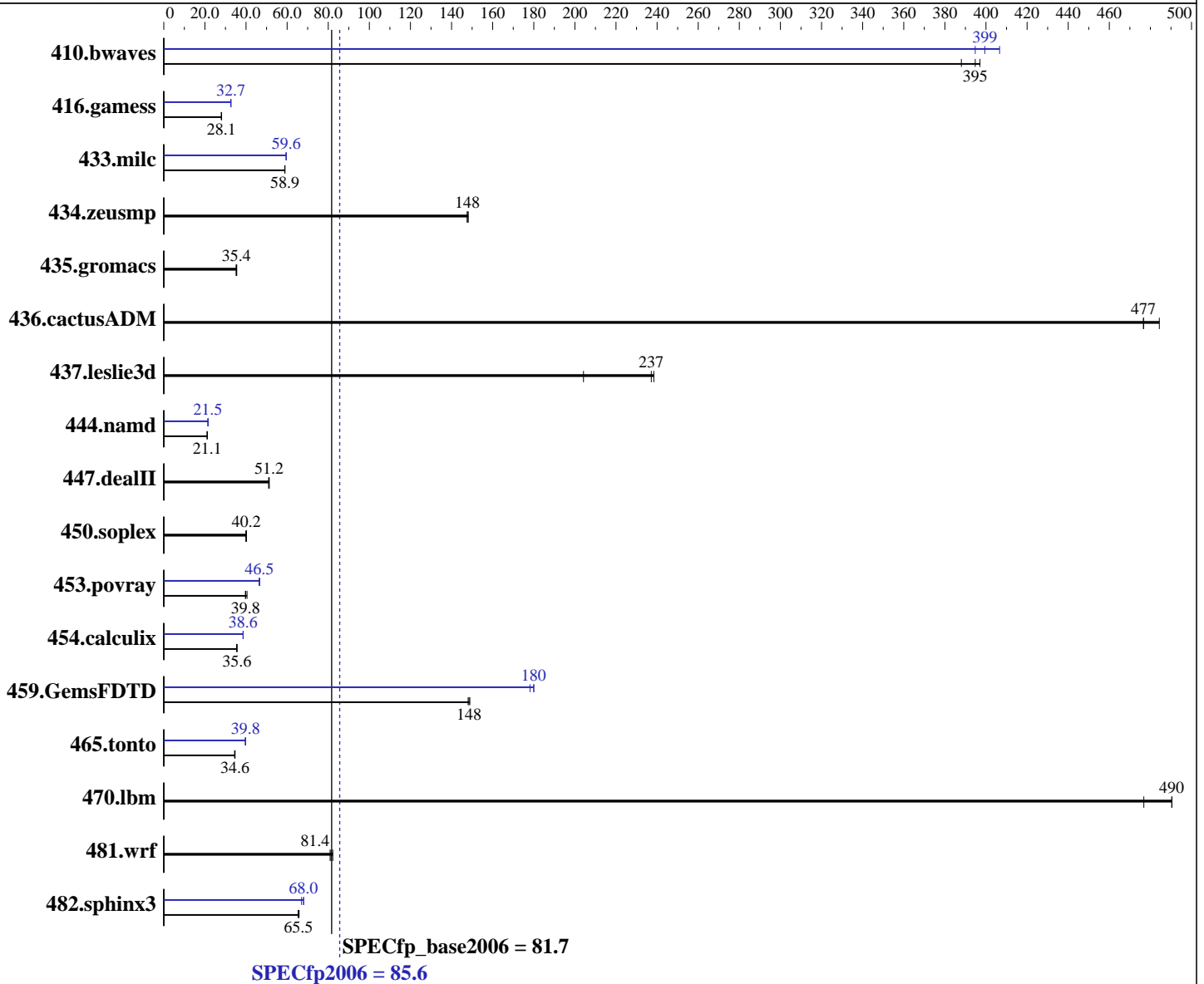
Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2665  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz  
 CPU MHz: 2400  
 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 6.2 (Santiago)  
 2.6.32-220.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	34.2	397	<b>34.4</b>	<b>395</b>	35.0	388	33.4	407	34.4	395	<b>34.0</b>	<b>399</b>
416.gamess	<b>697</b>	<b>28.1</b>	696	28.1	701	27.9	599	32.7	601	32.6	<b>600</b>	<b>32.7</b>
433.milc	156	59.0	156	58.8	<b>156</b>	<b>58.9</b>	154	59.5	<b>154</b>	<b>59.6</b>	154	59.6
434.zeusmp	61.4	148	<b>61.6</b>	<b>148</b>	61.6	148	61.4	148	<b>61.6</b>	<b>148</b>	61.6	148
435.gromacs	203	35.1	201	35.5	<b>202</b>	<b>35.4</b>	203	35.1	201	35.5	<b>202</b>	<b>35.4</b>
436.cactusADM	24.7	484	25.1	477	<b>25.1</b>	<b>477</b>	24.7	484	25.1	477	<b>25.1</b>	<b>477</b>
437.leslie3d	46.0	204	39.4	238	<b>39.6</b>	<b>237</b>	46.0	204	39.4	238	<b>39.6</b>	<b>237</b>
444.namd	380	21.1	<b>380</b>	<b>21.1</b>	380	21.1	<b>373</b>	<b>21.5</b>	373	21.5	373	21.5
447.dealII	224	51.0	223	51.3	<b>223</b>	<b>51.2</b>	224	51.0	223	51.3	<b>223</b>	<b>51.2</b>
450.soplex	209	39.9	207	40.2	<b>208</b>	<b>40.2</b>	209	39.9	207	40.2	<b>208</b>	<b>40.2</b>
453.povray	131	40.5	134	39.7	<b>134</b>	<b>39.8</b>	115	46.4	<b>115</b>	<b>46.5</b>	114	46.7
454.calculix	233	35.4	<b>232</b>	<b>35.6</b>	232	35.6	214	38.6	214	38.6	<b>214</b>	<b>38.6</b>
459.GemsFDTD	<b>71.5</b>	<b>148</b>	71.3	149	71.7	148	59.6	178	58.9	180	<b>59.0</b>	<b>180</b>
465.tonto	284	34.7	286	34.4	<b>284</b>	<b>34.6</b>	247	39.8	<b>247</b>	<b>39.8</b>	248	39.6
470.lbm	<b>28.0</b>	<b>490</b>	28.8	477	28.0	490	<b>28.0</b>	<b>490</b>	28.8	477	28.0	490
481.wrf	136	82.2	<b>137</b>	<b>81.4</b>	138	80.9	136	82.2	<b>137</b>	<b>81.4</b>	138	80.9
482.sphinx3	296	65.8	<b>297</b>	<b>65.5</b>	298	65.4	286	68.0	<b>287</b>	<b>68.0</b>	291	67.0

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:  
 echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
 Select only test related files when installing the operating system

## Platform Notes

BIOS configuration:  
 Intel Hyper-Threading set to Disabled  
 Set Power Efficiency Mode to Performance  
 Sysinfo program /spec/config/sysinfo.rev6800  
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
 running on RH62-rebuild Mon Jun 25 23:15:36 2012

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## 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 E5-2665 0 @ 2.40GHz
 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:        132124032 kB
HugePages_Total: 0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux RH62-rebuild 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jun 25 15:46
```

```
SPEC is set to: /spec
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal       ext4      289G  43G  232G  16% /
```

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 1x Core i7-860 CPU + 8GB memory using RHEL5.5



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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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Software Availability: Dec-2011

## 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: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

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

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<b>CPU2006 license:</b> 3175	<b>Test date:</b> Jun-2012
<b>Test sponsor:</b> Huawei	<b>Hardware Availability:</b> Mar-2012
<b>Tested by:</b> Huawei	<b>Software Availability:</b> Dec-2011

## Peak Optimization Flags (Continued)

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.20120703.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.20120703.xml>

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

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