



# SPEC® CFP2006 Result

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## Huawei

SPECfp®2006 = 62.8

### Huawei XH320 V2 (Intel Xeon E5-2430L)

SPECfp\_base2006 = 60.3

CPU2006 license: 3175

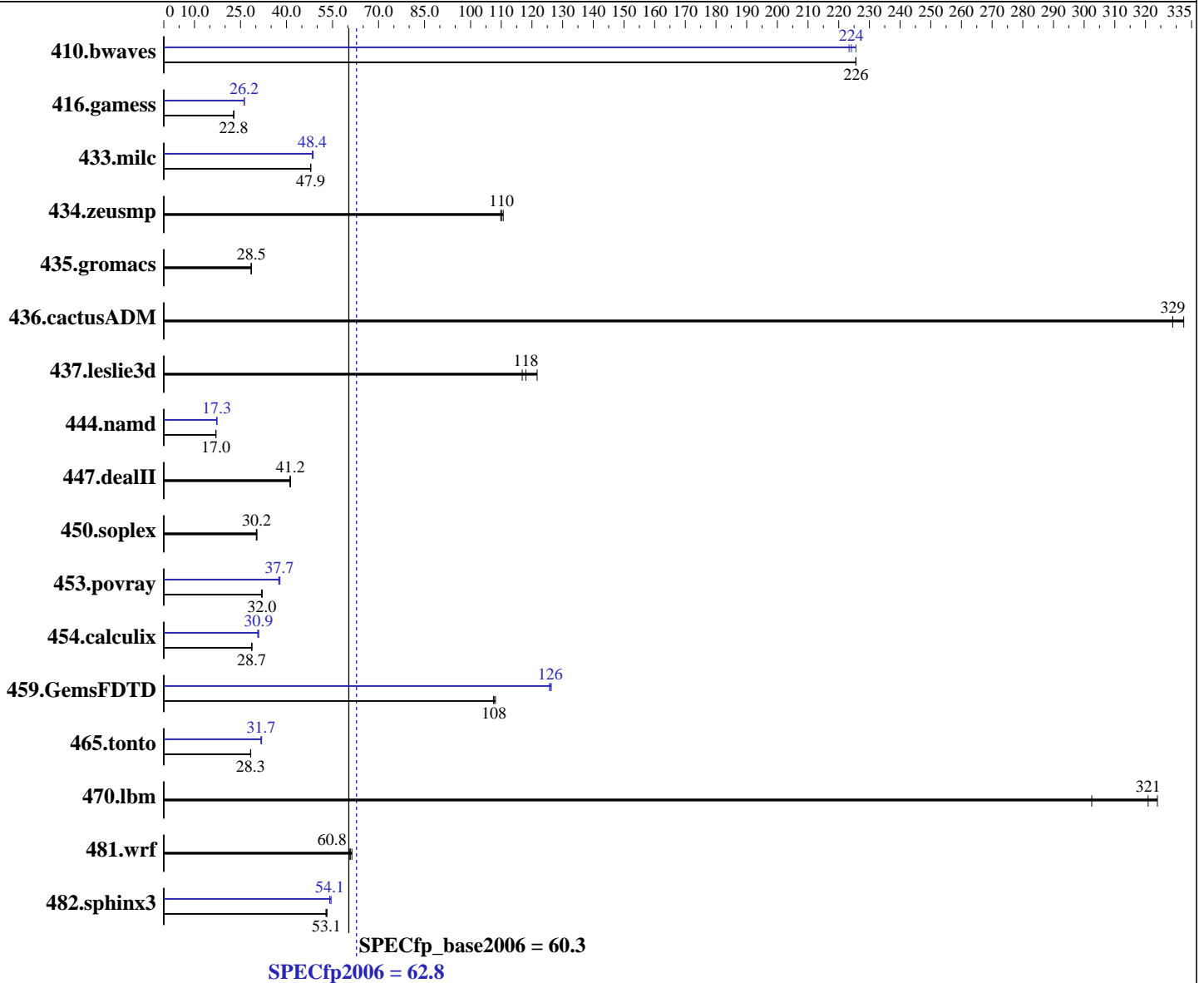
Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-2012

Hardware Availability: May-2012

Software Availability: Dec-2011



**Hardware**

CPU Name: Intel Xeon E5-2430L  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 96 GB (12 x 8 GB 1Rx4 PC3-10600R-9, 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    | 60.2        | 226         | <b>60.2</b> | <b>226</b>  | 60.2        | 226         | <b>60.6</b> | <b>224</b>  | 60.8        | 223         | 60.2        | 226         |
| 416.gamess    | 858         | 22.8        | <b>859</b>  | <b>22.8</b> | 859         | 22.8        | 748         | 26.2        | <b>747</b>  | <b>26.2</b> | 746         | 26.3        |
| 433.milc      | <b>192</b>  | <b>47.9</b> | 192         | 47.9        | 192         | 47.8        | 190         | 48.4        | <b>189</b>  | <b>48.4</b> | 188         | 48.7        |
| 434.zeusmp    | 82.8        | 110         | <b>82.6</b> | <b>110</b>  | 82.2        | 111         | 82.8        | 110         | <b>82.6</b> | <b>110</b>  | 82.2        | 111         |
| 435.gromacs   | 250         | 28.5        | <b>250</b>  | <b>28.5</b> | 251         | 28.5        | 250         | 28.5        | <b>250</b>  | <b>28.5</b> | 251         | 28.5        |
| 436.cactusADM | 35.9        | 332         | 36.3        | 329         | <b>36.3</b> | <b>329</b>  | 35.9        | 332         | 36.3        | 329         | <b>36.3</b> | <b>329</b>  |
| 437.leslie3d  | <b>79.7</b> | <b>118</b>  | 77.3        | 122         | 80.4        | 117         | <b>79.7</b> | <b>118</b>  | 77.3        | 122         | 80.4        | 117         |
| 444.namd      | <b>472</b>  | <b>17.0</b> | 472         | 17.0        | 472         | 17.0        | 464         | 17.3        | 464         | 17.3        | <b>464</b>  | <b>17.3</b> |
| 447.dealII    | 278         | 41.1        | 277         | 41.3        | <b>277</b>  | <b>41.2</b> | 278         | 41.1        | 277         | 41.3        | <b>277</b>  | <b>41.2</b> |
| 450.soplex    | <b>276</b>  | <b>30.2</b> | 277         | 30.2        | 275         | 30.4        | <b>276</b>  | <b>30.2</b> | 277         | 30.2        | 275         | 30.4        |
| 453.povray    | <b>166</b>  | <b>32.0</b> | 167         | 31.9        | 166         | 32.0        | 142         | 37.5        | <b>141</b>  | <b>37.7</b> | 140         | 37.9        |
| 454.calculix  | <b>288</b>  | <b>28.7</b> | 288         | 28.6        | 287         | 28.7        | 269         | 30.6        | 267         | 30.9        | <b>267</b>  | <b>30.9</b> |
| 459.GemsFDTD  | <b>98.6</b> | <b>108</b>  | 98.7        | 107         | 98.1        | 108         | <b>84.2</b> | <b>126</b>  | 84.4        | 126         | 84.0        | 126         |
| 465.tonto     | 347         | 28.3        | <b>348</b>  | <b>28.3</b> | 348         | 28.3        | 309         | 31.9        | <b>310</b>  | <b>31.7</b> | 310         | 31.7        |
| 470.lbm       | 42.4        | 324         | 45.4        | 302         | <b>42.8</b> | <b>321</b>  | 42.4        | 324         | 45.4        | 302         | <b>42.8</b> | <b>321</b>  |
| 481.wrf       | <b>184</b>  | <b>60.8</b> | 184         | 60.7        | 182         | 61.3        | <b>184</b>  | <b>60.8</b> | 184         | 60.7        | 182         | 61.3        |
| 482.sphinx3   | 366         | 53.2        | 369         | 52.8        | <b>367</b>  | <b>53.1</b> | 357         | 54.5        | 360         | 54.1        | <b>360</b>  | <b>54.1</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:  
 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 BH622-RH6.2 Wed Jun 13 16:55:20 2012

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Huawei XH320 V2 (Intel Xeon E5-2430L)

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CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jun-2012

Hardware Availability: May-2012

Software Availability: Dec-2011

## 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 E5-2430L 0 @ 2.00GHz
 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:      99043704 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 BH622-RH6.2 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 12 18:30
```

```
SPEC is set to: /spec
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal       ext4      197G  25G  163G  14% /
```

Additional information from dmidecode:

```
Memory:
 12x Samsu M393B 8 GB 1333 MHz 1 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"
```

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

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Software Availability: Dec-2011

## General Notes (Continued)

using RHEL 6.1

## 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

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|  |                          |             |
|--|--------------------------|-------------|
| <b>Huawei</b>                                | <b>SPECfp2006 =</b>      | <b>62.8</b> |
| <b>Huawei XH320 V2 (Intel Xeon E5-2430L)</b> | <b>SPECfp_base2006 =</b> | <b>60.3</b> |

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

## Base Optimization Flags (Continued)

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: `-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`

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## Peak Optimization Flags (Continued)

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

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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