## SPEC® CFP2006 Result

**Huawei**

Huawei CH222 V3 (Intel Xeon E5-2637 v3)

### SPECfp®2006 = 106

**SPECfp_base2006 = 102**

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td>102</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3175

**Hardware**

- **CPU Name:** Intel Xeon E5-2637 v3
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz
- **CPU MHz:** 3500
- **FPU:** Integrated
- **CPU(s) enabled:** 8 cores, 2 chips, 4 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

**Software**

- **Operating System:** Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64
- **Compiler:** ICC++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
  Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
- **Auto Parallel:** Yes
- **File System:** ext4

**Test date:** Jan-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

Continued on next page
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>30.9</td>
<td>440</td>
<td>30.8</td>
<td>442</td>
<td>30.6</td>
<td>444</td>
<td>30.9</td>
<td>440</td>
<td>30.8</td>
<td>442</td>
<td>30.6</td>
<td>444</td>
</tr>
<tr>
<td>416.gamess</td>
<td>467</td>
<td>41.9</td>
<td>468</td>
<td>41.8</td>
<td>467</td>
<td>41.9</td>
<td>424</td>
<td>46.2</td>
<td>422</td>
<td>46.3</td>
<td>423</td>
<td>46.3</td>
</tr>
<tr>
<td>433.milc</td>
<td>125</td>
<td>73.5</td>
<td>125</td>
<td>73.6</td>
<td>125</td>
<td>73.5</td>
<td>124</td>
<td>73.8</td>
<td>124</td>
<td>73.9</td>
<td>124</td>
<td>74.1</td>
</tr>
<tr>
<td>434.tcz</td>
<td>49.9</td>
<td>182</td>
<td>49.9</td>
<td>182</td>
<td>49.6</td>
<td>184</td>
<td>49.9</td>
<td>182</td>
<td>49.9</td>
<td>182</td>
<td>49.6</td>
<td>184</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>140</td>
<td>50.9</td>
<td>142</td>
<td>50.2</td>
<td>141</td>
<td>50.6</td>
<td>140</td>
<td>50.9</td>
<td>142</td>
<td>50.2</td>
<td>141</td>
<td>50.6</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>22.4</td>
<td>534</td>
<td>22.1</td>
<td>542</td>
<td>22.5</td>
<td>532</td>
<td>22.4</td>
<td>534</td>
<td>22.1</td>
<td>542</td>
<td>22.5</td>
<td>532</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>38.6</td>
<td>244</td>
<td>38.6</td>
<td>244</td>
<td>38.5</td>
<td>244</td>
<td>38.6</td>
<td>244</td>
<td>38.6</td>
<td>244</td>
<td>38.5</td>
<td>244</td>
</tr>
<tr>
<td>444.namd</td>
<td>256</td>
<td>31.3</td>
<td>256</td>
<td>31.3</td>
<td>256</td>
<td>31.3</td>
<td>249</td>
<td>32.2</td>
<td>249</td>
<td>32.2</td>
<td>249</td>
<td>32.2</td>
</tr>
<tr>
<td>447.dealII</td>
<td>190</td>
<td>60.1</td>
<td>190</td>
<td>60.1</td>
<td>193</td>
<td>59.2</td>
<td>190</td>
<td>60.1</td>
<td>190</td>
<td>60.1</td>
<td>193</td>
<td>59.2</td>
</tr>
<tr>
<td>450.soplex</td>
<td>199</td>
<td>42.0</td>
<td>200</td>
<td>41.8</td>
<td>200</td>
<td>41.8</td>
<td>199</td>
<td>42.0</td>
<td>200</td>
<td>41.8</td>
<td>200</td>
<td>41.8</td>
</tr>
<tr>
<td>453.povray</td>
<td>87.3</td>
<td>60.9</td>
<td>86.8</td>
<td>61.3</td>
<td>86.8</td>
<td>61.3</td>
<td>78.2</td>
<td>68.1</td>
<td>78.5</td>
<td>67.7</td>
<td>77.8</td>
<td>68.4</td>
</tr>
<tr>
<td>454.calculix</td>
<td>139</td>
<td>59.2</td>
<td>139</td>
<td>59.3</td>
<td>140</td>
<td>59.1</td>
<td>130</td>
<td>63.4</td>
<td>130</td>
<td>63.3</td>
<td>130</td>
<td>63.3</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>58.1</td>
<td>183</td>
<td>59.7</td>
<td>178</td>
<td>59.7</td>
<td>178</td>
<td>53.8</td>
<td>197</td>
<td>53.9</td>
<td>197</td>
<td>53.4</td>
<td>199</td>
</tr>
<tr>
<td>465.lammps</td>
<td>205</td>
<td>48.1</td>
<td>205</td>
<td>48.1</td>
<td>204</td>
<td>48.2</td>
<td>172</td>
<td>57.1</td>
<td>173</td>
<td>57.0</td>
<td>172</td>
<td>57.1</td>
</tr>
<tr>
<td>470.lbm</td>
<td>30.9</td>
<td>444</td>
<td>31.2</td>
<td>441</td>
<td>31.4</td>
<td>438</td>
<td>30.9</td>
<td>444</td>
<td>31.2</td>
<td>441</td>
<td>31.4</td>
<td>438</td>
</tr>
<tr>
<td>481.wrf</td>
<td>115</td>
<td>97.0</td>
<td>117</td>
<td>95.6</td>
<td>115</td>
<td>97.4</td>
<td>115</td>
<td>97.0</td>
<td>117</td>
<td>95.6</td>
<td>115</td>
<td>97.4</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>227</td>
<td>85.7</td>
<td>220</td>
<td>88.5</td>
<td>220</td>
<td>88.4</td>
<td>227</td>
<td>85.7</td>
<td>220</td>
<td>88.5</td>
<td>220</td>
<td>88.4</td>
</tr>
</tbody>
</table>

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 Snoop Mode to HS
Set Hyper-Threading to Disabled
Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Sat Jan 10 05:01:09 2015

This section contains SUT (System Under Test) info as seen by
Continued on next page
Huawei

Huawei CH222 V3 (Intel Xeon E5-2637 v3)

| SPECfp2006 =  | 106 |
| SPECfp_base2006 = | 102 |

**CPU2006 license:** 3175

**Test date:** Jan-2015

**Test sponsor:** Huawei

**Tested by:** Huawei

---

**Platform Notes (Continued)**

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 E5-2637 v3 @ 3.50GHz
- 2 "physical id"s (chips)
- 8 "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 : 4
  - siblings : 4
  - physical 0: cores 0 1 4 5
  - physical 1: cores 0 1 4 5
- cache size : 15360 KB

From `/proc/meminfo`

- MemTotal: 263722408 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From `/etc/*release* /etc/*version*`

**os-release**:

```
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

unname -a:

```
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Jan 10 05:00

SPEC is set to: /spec15

```
Filesystem   Type  Size  Used Avail Use% Mounted on
/dev/sdb1   ext4  237G  11G  215G   5% /
```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Insysde Corp. 1.19 10/10/2014

Continued on next page
Huawei CH222 V3 (Intel Xeon E5-2637 v3)

SPECfp2006 = 106
SPECfp_base2006 = 102

CPU2006 license: 3175
Test date: Jan-2015
Test sponsor: Huawei
Hardware Availability: Sep-2014
Tested by: Huawei
Software Availability: Sep-2014

Platform Notes (Continued)

Memory:
8x NO DIMM NO DIMM 3 rank
8x Samsung M393A2G40DB0-CPB 16 GB 1 rank 2133 MHz
8x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec15/libs/32:/spec15/libs/64:/spec15/sh"
OMP_NUM_THREADS = "8"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>
The Huawei CH121 V3 and Huawei CH222 V3 models are electronically equivalent. The results have been measured on a Huawei CH121 V3 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

Continued on next page
Huawei

Huawei CH222 V3 (Intel Xeon E5-2637 v3)

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td>102</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3175

**Test date:** Jan-2015

**Hardware Availability:** Sep-2014

**Test sponsor:** Huawei

**Tested by:** Huawei

**Software Availability:** Sep-2014

---

**Base Portability Flags (Continued)**

- 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:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
  -ansi-alias

- C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

- Fortran benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

- Benchmarks using both Fortran and C:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -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
Huawei

Huawei CH222 V3 (Intel Xeon E5-2637 v3)

SPEC fp2006 = 106
SPEC fp_base2006 = 102

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
          -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
          -auto-ilp32 -ansi-alias

470.lbm: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -xCORE-AVX2(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.dealII: basepeak = yes
450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(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: -xCORE-AVX2(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-

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(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: -xCORE-AVX2(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

Continued on next page
Huawei

Huawei CH222 V3 (Intel Xeon E5-2637 v3)

SPECfp2006 = 106
SPECfp_base2006 = 102

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
454.calculix: --xCORE-AVX2 -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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Originally published on 27 January 2015.