## SPEC® CFP2006 Result

### Huawei

**Huawei CH226 V3 (Intel Xeon E5-2623 v3)**

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>97.4</td>
<td>93.9</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
</table>
| **CPU Name:** Intel Xeon E5-2623 v3  
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.50 GHz  
**CPU MHz:** 3000  
**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 | Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)  
3.10.0-123.el7.x86_64  
Compiler: C/C++: 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 |

```
<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECfp</th>
<th>SPECfp_base</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>44.8</td>
<td></td>
</tr>
<tr>
<td>416.gamess</td>
<td>39.9</td>
<td></td>
</tr>
<tr>
<td>433.milc</td>
<td>72.8</td>
<td>72.8</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td></td>
<td>168</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>47.9</td>
<td></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>483</td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>207</td>
<td></td>
</tr>
<tr>
<td>444.namd</td>
<td>30.4</td>
<td></td>
</tr>
<tr>
<td>447.dealII</td>
<td>29.6</td>
<td>57.8</td>
</tr>
<tr>
<td>450.soplex</td>
<td>37.6</td>
<td></td>
</tr>
<tr>
<td>453.povray</td>
<td>66.3</td>
<td>59.4</td>
</tr>
<tr>
<td>454.calculix</td>
<td></td>
<td>60.7</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>179</td>
<td>160</td>
</tr>
<tr>
<td>465.tonto</td>
<td>55.0</td>
<td></td>
</tr>
<tr>
<td>470.lbm</td>
<td>45.4</td>
<td></td>
</tr>
<tr>
<td>481.wrf</td>
<td>87.9</td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>82.2</td>
<td></td>
</tr>
</tbody>
</table>
```

**SPECFp_base2006 = 93.9**  
**SPECFp2006 = 97.4**

Continued on next page

---

Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/  
Page 1
Huawei
Huawei CH226 V3 (Intel Xeon E5-2623 v3)

SPECfp2006 = 97.4
SPECfp_base2006 = 93.9

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

L3 Cache: 10 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
Disk Subsystem: 1 x 500 GB SATA, 7200 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

<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>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>42.5</td>
<td>320</td>
<td>42.1</td>
<td>323</td>
<td>43.2</td>
<td>314</td>
<td>42.5</td>
<td>320</td>
</tr>
<tr>
<td>416.gamess</td>
<td>490</td>
<td>39.9</td>
<td>491</td>
<td>39.9</td>
<td>491</td>
<td>39.9</td>
<td>437</td>
<td>44.8</td>
</tr>
<tr>
<td>433.milc</td>
<td>126</td>
<td>72.8</td>
<td>127</td>
<td>72.1</td>
<td>125</td>
<td>73.3</td>
<td>126</td>
<td>72.7</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>54.3</td>
<td>168</td>
<td>54.2</td>
<td>168</td>
<td>54.5</td>
<td>167</td>
<td>54.3</td>
<td>168</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>149</td>
<td>48.0</td>
<td>149</td>
<td>47.9</td>
<td>149</td>
<td>47.9</td>
<td>149</td>
<td>48.0</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>24.6</td>
<td>486</td>
<td>25.2</td>
<td>474</td>
<td>24.7</td>
<td>483</td>
<td>24.6</td>
<td>486</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>45.0</td>
<td>209</td>
<td>45.4</td>
<td>207</td>
<td>45.9</td>
<td>205</td>
<td>45.0</td>
<td>209</td>
</tr>
<tr>
<td>444.namd</td>
<td>271</td>
<td>29.6</td>
<td>271</td>
<td>29.6</td>
<td>271</td>
<td>29.6</td>
<td>264</td>
<td>30.4</td>
</tr>
<tr>
<td>447.dealII</td>
<td>197</td>
<td>57.9</td>
<td>198</td>
<td>57.8</td>
<td>199</td>
<td>57.5</td>
<td>197</td>
<td>57.9</td>
</tr>
<tr>
<td>450.soplex</td>
<td>219</td>
<td>38.1</td>
<td>222</td>
<td>37.5</td>
<td>222</td>
<td>37.6</td>
<td>219</td>
<td>38.1</td>
</tr>
<tr>
<td>453.povray</td>
<td>89.7</td>
<td>59.3</td>
<td>89.4</td>
<td>59.5</td>
<td>89.5</td>
<td>59.4</td>
<td>79.9</td>
<td>66.6</td>
</tr>
<tr>
<td>454.calculix</td>
<td>145</td>
<td>57.0</td>
<td>145</td>
<td>57.0</td>
<td>145</td>
<td>57.0</td>
<td>136</td>
<td>60.8</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>67.0</td>
<td>158</td>
<td>66.1</td>
<td>160</td>
<td>65.9</td>
<td>161</td>
<td>59.1</td>
<td>179</td>
</tr>
<tr>
<td>465.tonto</td>
<td>217</td>
<td>45.4</td>
<td>216</td>
<td>45.5</td>
<td>217</td>
<td>45.4</td>
<td>179</td>
<td>55.1</td>
</tr>
<tr>
<td>470.lbm</td>
<td>33.8</td>
<td>406</td>
<td>34.9</td>
<td>393</td>
<td>34.4</td>
<td>399</td>
<td>33.8</td>
<td>406</td>
</tr>
<tr>
<td>481.wrf</td>
<td>128</td>
<td>87.5</td>
<td>126</td>
<td>88.7</td>
<td>127</td>
<td>87.9</td>
<td>128</td>
<td>87.5</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>237</td>
<td>82.3</td>
<td>237</td>
<td>82.2</td>
<td>241</td>
<td>80.8</td>
<td>237</td>
<td>82.3</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 ES mode
Set Patrol Scrub to Disable
Set Hyper-Threading to Disable
Sysinfo program /spec/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e8219e1
running on localhost.localdomain Fri Aug 28 10:14:48 2015

Continued on next page
Huawei

Huawei CH226 V3 (Intel Xeon E5-2623 v3)

SPECfp2006 = 97.4
SPECfp_base2006 = 93.9

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

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

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 E5-2623 v3 @ 3.00GHz
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 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB

From /proc/meminfo
MemTotal: 263580300 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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

uname -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 Aug 28 06:15

SPEC is set to: /spec
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 443G 7.2G 413G 2% /

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.

Continued on next page
Huawei CH226 V3 (Intel Xeon E5-2623 v3)

**SPECfp2006** = 97.4
**SPECfp_base2006** = 93.9

<table>
<thead>
<tr>
<th>CPU2006 license: 3175</th>
<th>Test date: Aug-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor: Huawei</td>
<td>Hardware Availability: Sep-2014</td>
</tr>
<tr>
<td>Tested by: Huawei</td>
<td>Software Availability: Sep-2014</td>
</tr>
</tbody>
</table>

**Platform Notes (Continued)**

BIOS Insyde Corp. 1.36 04/09/2015
Memory:
- 8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz, configured at 1867 MHz
- 8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1867 MHz
- 8x NO DIMM NO DIMM 3 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,1,0"
- LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/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.:
  - numactl --interleave=all runspec <etc>

**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 -nofor_main
- 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
- 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
- 437.leslie3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64

Continued on next page
Huawei CH226 V3 (Intel Xeon E5-2623 v3)

SPECfp2006 = 97.4
SPECfp_base2006 = 93.9

Base Portability Flags (Continued)

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

Peak Portability Flags

Same as Base Portability Flags
Huawei | SPECfp2006 = 97.4 | SPECfp_base2006 = 93.9
---|---|---
Huawei CH226 V3 (Intel Xeon E5-2623 v3) | CPU2006 license: 3175 | Test date: Aug-2015
Test sponsor: Huawei | Hardware Availability: Sep-2014
Tested by: Huawei | Software Availability: Sep-2014

### 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) -unroll14 -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 -unroll14

#### Benchmarks using both Fortran and C:

- 435.gromacs: basepeak = yes
- 436.cactusADM: basepeak = yes

Continued on next page
Huawei CH226 V3 (Intel Xeon E5-2623 v3)

SPECfp2006 = 97.4
SPECfp_base2006 = 93.9

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

Peak Optimization Flags (Continued)

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-V1.4.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-V1.4.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 22 September 2015.