**Huawei**

**Huawei 1288H V5 (Intel Xeon Gold 6132)**

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>146</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>140</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3175  
**Test date:** Jun-2017  
**Hardware Availability:** Aug-2017  
**Tested by:** Huawei

| Software Availability: | Nov-2016 |

**CPU Name:** Intel Xeon Gold 6132  
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
**CPU MHz:** 2600  
**FPU:** Integrated  
**CPU(s) enabled:** 28 cores, 2 chips, 14 cores/chip  
**CPU(s) orderable:** 1.2 chip  
**Primary Cache:** 32 KB I + 32 KB D on chip per core  
**Secondary Cache:** 1 MB I+D on chip per core

**Operating System:** Red Hat Enterprise Linux Server release 7.3 (Maipo)  
3.10.0-514.el7.x86_64  
**Compiler:** C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux; Fortran: Version 17.0.0.098 of Intel Fortran Compiler for Linux

**Auto Parallel:** Yes  
**File System:** xfs

---

**SPECfp®2006 = 146**  
**SPECfp_base2006 = 140**

---

**Hardware**

---

**Software**

---

**Continued on next page**

Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
**Huawei**

**Huawei 1288H V5 (Intel Xeon Gold 6132)**

**SPEC CFP2006 Result**

**Huawei**

**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Test date:** Jun-2017  
**Hardware Availability:** Aug-2017  
**Software Availability:** Nov-2016

**L3 Cache:** 19.25 MB I+D on chip per chip  
**Other Cache:** None  
**Memory:** 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)  
**Disk Subsystem:** 1 x 1200 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

<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>14.8</td>
<td>917</td>
<td>15.0</td>
<td>907</td>
<td>15.1</td>
<td>897</td>
<td>14.8</td>
<td>917</td>
<td>15.0</td>
<td>907</td>
<td>15.1</td>
<td>897</td>
</tr>
<tr>
<td>416.gamess</td>
<td>396</td>
<td>49.5</td>
<td>395</td>
<td>49.5</td>
<td>395</td>
<td>49.5</td>
<td>371</td>
<td>52.8</td>
<td>370</td>
<td>52.9</td>
<td>370</td>
<td>52.9</td>
</tr>
<tr>
<td>433.milc</td>
<td>118</td>
<td>78.0</td>
<td>117</td>
<td>78.2</td>
<td>115</td>
<td>79.5</td>
<td>118</td>
<td>78.0</td>
<td>117</td>
<td>78.2</td>
<td>115</td>
<td>79.5</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>33.6</td>
<td>271</td>
<td>333</td>
<td>274</td>
<td>33.1</td>
<td>275</td>
<td>33.6</td>
<td>271</td>
<td>333</td>
<td>274</td>
<td>33.1</td>
<td>275</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>127</td>
<td>56.3</td>
<td>127</td>
<td>56.4</td>
<td>127</td>
<td>56.4</td>
<td>127</td>
<td>56.3</td>
<td>127</td>
<td>56.4</td>
<td>127</td>
<td>56.4</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>11.0</td>
<td>1080</td>
<td>11.0</td>
<td>1080</td>
<td>10.9</td>
<td>1100</td>
<td>11.0</td>
<td>1080</td>
<td>11.0</td>
<td>1080</td>
<td>10.9</td>
<td>1100</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>21.1</td>
<td>446</td>
<td>21.4</td>
<td>440</td>
<td>20.8</td>
<td>452</td>
<td>21.1</td>
<td>446</td>
<td>21.4</td>
<td>440</td>
<td>20.8</td>
<td>452</td>
</tr>
<tr>
<td>444.namd</td>
<td>225</td>
<td>35.6</td>
<td>225</td>
<td>35.6</td>
<td>225</td>
<td>35.6</td>
<td>221</td>
<td>36.3</td>
<td>221</td>
<td>36.3</td>
<td>221</td>
<td>36.3</td>
</tr>
<tr>
<td>447.dealII</td>
<td>162</td>
<td>70.7</td>
<td>161</td>
<td>71.2</td>
<td>162</td>
<td>70.7</td>
<td>162</td>
<td>70.7</td>
<td>161</td>
<td>71.2</td>
<td>162</td>
<td>70.7</td>
</tr>
<tr>
<td>450.soplex</td>
<td>169</td>
<td>49.3</td>
<td>170</td>
<td>49.2</td>
<td>169</td>
<td>49.4</td>
<td>169</td>
<td>49.3</td>
<td>170</td>
<td>49.2</td>
<td>169</td>
<td>49.4</td>
</tr>
<tr>
<td>453.povray</td>
<td>76.8</td>
<td>69.3</td>
<td>76.7</td>
<td>69.4</td>
<td>76.5</td>
<td>69.6</td>
<td>67.7</td>
<td>78.5</td>
<td>68.1</td>
<td>78.2</td>
<td>68.3</td>
<td>77.9</td>
</tr>
<tr>
<td>454.calculix</td>
<td>113</td>
<td>72.7</td>
<td>114</td>
<td>72.6</td>
<td>114</td>
<td>72.6</td>
<td>108</td>
<td>76.6</td>
<td>108</td>
<td>76.6</td>
<td>108</td>
<td>76.6</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>36.4</td>
<td>292</td>
<td>37.1</td>
<td>286</td>
<td>37.3</td>
<td>284</td>
<td>30.6</td>
<td>346</td>
<td>31.1</td>
<td>341</td>
<td>31.3</td>
<td>339</td>
</tr>
<tr>
<td>465.tonto</td>
<td>191</td>
<td>51.6</td>
<td>186</td>
<td>52.8</td>
<td>186</td>
<td>52.8</td>
<td>142</td>
<td>69.4</td>
<td>141</td>
<td>69.6</td>
<td>141</td>
<td>69.6</td>
</tr>
<tr>
<td>470.lbm</td>
<td>11.9</td>
<td>1150</td>
<td>11.5</td>
<td>1190</td>
<td>11.5</td>
<td>1190</td>
<td>11.9</td>
<td>1150</td>
<td>11.5</td>
<td>1190</td>
<td>11.5</td>
<td>1190</td>
</tr>
<tr>
<td>481.wrf</td>
<td>89.3</td>
<td>125</td>
<td>83.6</td>
<td>134</td>
<td>87.2</td>
<td>128</td>
<td>89.3</td>
<td>125</td>
<td>83.6</td>
<td>134</td>
<td>87.2</td>
<td>128</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>242</td>
<td>80.7</td>
<td>241</td>
<td>80.9</td>
<td>243</td>
<td>80.1</td>
<td>242</td>
<td>80.7</td>
<td>241</td>
<td>80.9</td>
<td>243</td>
<td>80.1</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 Hyper-Threading to Disable
Sysinfo program /spec17/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
rating on localhost.localdomain Tue Jun 27 01:42:36 2017

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
Continued on next page
Huawei

Huawei 1288H V5 (Intel Xeon Gold 6132)

SPECfp2006 = 146
SPECfp_base2006 = 140

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

Test date: Jun-2017
Hardware Availability: Aug-2017
Software Availability: Nov-2016

Platform Notes (Continued)

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) Gold 6132 CPU @ 2.60GHz
  2 "physical id"s (chips)
  28 "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 : 14
  siblings : 14
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  cache size : 19712 KB

From /proc/meminfo
  MemTotal: 394145204 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
  os-release:
    NAME="Red Hat Enterprise Linux Server"
    VERSION="7.3 (Maipo)"
    ID="rhel"
    ID_LIKE="fedora"
    VERSION_ID="7.3"
    PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
    ANSI_COLOR="0;31"
    CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
    redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
    system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

uname -a:
  Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13
  EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 26 08:03

SPEC is set to: /spec17
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda2      xfs   262G  87G  175G  34% /

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 INSYDE Corp. 0.10 02/14/2017
Memory:
  24x Samsung M393A2K43BB1-CTD 16 GB 2 rank 2666 MHz
Continued on next page
Huawei
Huawei 1288H V5 (Intel Xeon Gold 6132)

SPECfp2006 = 146
SPECfp_base2006 = 140

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

Test date: Jun-2017
Hardware Availability: Aug-2017
Software Availability: Nov-2016

Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/spec17/libs/32:/spec17/libs/64:/spec17/sh10.2"
OMP_NUM_THREADS = "28"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.2
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
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

Continued on next page
Huawei

Huawei 1288H V5 (Intel Xeon Gold 6132)

| SPECfp2006 = | 146 |
| SPECfp_base2006 = | 140 |

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

| Test date: | Jun-2017 |
| Hardware Availability: | Aug-2017 |
| Software Availability: | Nov-2016 |

### Base Portability Flags (Continued)

- 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 -qopt-prefetch
- C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
- Fortran benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
- Benchmarks using both Fortran and C:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

### 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:

Continued on next page
Huawei 1288H V5 (Intel Xeon Gold 6132)

**SPECfp2006 =** 146
**SPECfp_base2006 =** 140

**CPU2006 license:** 3175  
**Test date:** Jun-2017  
**Test sponsor:** Huawei  
**Hardware Availability:** Aug-2017  
**Tested by:** Huawei  
**Software Availability:** Nov-2016

---

**Peak Optimization Flags (Continued)**

- `433.milc`: basepeak = yes
- `470.lbm`: basepeak = yes
- `482.sphinx3`: basepeak = yes

**C++ benchmarks:**

- `444.namd`: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -fno-alias -auto-ilp32
- `447.dealII`: basepeak = yes
- `450.soplex`: basepeak = yes
- `453.povray`: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -unroll4 -ansi-alias

**Fortran benchmarks:**

- `410.bwaves`: basepeak = yes
- `416.gamess`: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-
- `434.zeusmp`: basepeak = yes
- `437.leslie3d`: basepeak = yes
- `459.GemsFDTD`: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -unroll2 -inline-level=0 -qopt-prefetch -parallel
- `465.tonto`: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -inline-callloc -qopt-malloc-options=3 -auto -unroll4

**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

---

Continued on next page
SPEC CFP2006 Result

Huawei
Huawei 1288H V5 (Intel Xeon Gold 6132)

SPECfp2006 = 146
SPECfp_base2006 = 140

CPU2006 license: 3175
Test date: Jun-2017
Test sponsor: Huawei
Hardware Availability: Aug-2017
Tested by: Huawei
Software Availability: Nov-2016

Peak Optimization Flags (Continued)

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-ic17.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-SKL-V1.6.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-SKL-V1.6.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.