Huawei CH226 V3 (Intel Xeon E5-2680 v3) SPECfp®2006 = 110
SPECfp_base2006 = 106

CPU2006 license: 3175
Test sponsor: Huawei
Test date: Sep-2015
CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip
Tested by: Huawei
Hardware Availability: Sep-2014
Software Availability: Sep-2014

## Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2680 v3</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.30 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2500</td>
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<tr>
<td>FPU</td>
<td>Integrated</td>
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<tr>
<td>CPU(s) enabled</td>
<td>24 cores, 2 chips, 12 cores/chip</td>
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<td>CPU(s) orderable</td>
<td>1.2 chip</td>
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<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
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<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
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</table>

## Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64</td>
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<tr>
<td>Compiler</td>
<td>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</td>
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<td>Auto Parallel</td>
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<td>File System</td>
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---

Continued on next page
## SPEC CFP2006 Result

**Huawei CH226 V3 (Intel Xeon E5-2680 v3)**

**SPECfp2006 =** 110  
**SPECfp_base2006 =** 106

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

<table>
<thead>
<tr>
<th>L3 Cache:</th>
<th>30 MB I+D on chip per chip</th>
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<tr>
<td>Other Cache:</td>
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<td>Memory:</td>
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<td>Disk Subsystem:</td>
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<td>Other Hardware:</td>
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<td>System State:</td>
<td>Run level 3 (multi-user)</td>
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<td>Base Pointers:</td>
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<tr>
<td>Peak Pointers:</td>
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<td>Other Software:</td>
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### Results Table

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<tr>
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<th>Seconds</th>
<th>Ratio</th>
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<td>257</td>
<td>76.0</td>
<td></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 mode
- Set Patrol Scrub to Disable
- Set Hyper-Threading to Disable

Sysinfo program /spec/config/sysinfo.rev6914  
$Rev: 6914 $ $Date:: 2014-06-25 $$ e3fbb8667b5a285932ceab81e28219e1  
running on localhost.localdomain Tue Sep 22 16:30:40 2015

This section contains SUT (System Under Test) info as seen by
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 E5-2680 v3 @ 2.50GHz
  2 "physical id"s (chips)
  24 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 12
siblings : 12
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB

From /proc/meminfo
MemTotal:       263578444 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

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 Sep 22 16:29

SPEC is set to: /spec
Filesystem     Type Size  Used Avail Use% Mounted on
/dev/sda1      ext4  443G  96G  324G  23% /

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. 1.36 04/09/2015
Continued on next page
Huawei CH226 V3 (Intel Xeon E5-2680 v3)

| SPECfp2006 | 110 |
| SPECfp_base2006 | 106 |

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

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

Platform Notes (Continued)

Memory:
- 8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz
- 8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 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 = "24"

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
runcspec 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
- 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
- 437.leslie3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64 -nofor_main
- 447.dealII: -DSPEC_CPU_LP64

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Huawei CH226 V3 (Intel Xeon E5-2680 v3)

SPECfp2006 = 110
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Hardware Availability: Sep-2014
Software Availability: Sep-2014

Base Portability Flags (Continued)

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

Huawei CH226 V3 (Intel Xeon E5-2680 v3)

SPECfp2006 = 110
SPECfp_base2006 = 106

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

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

Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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)
-03(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)
-03(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)
-03(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)
-03(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)
-03(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

Continued on next page
Huawei CH226 V3 (Intel Xeon E5-2680 v3) SPECfp2006 = 110 SPECfp_base2006 = 106

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

Peak Optimization Flags (Continued)

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-1p32 -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

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

Tested with SPEC CPU2006 v1.2.
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