## SPEC® CFP2006 Result

### Huawei

**Huawei RH2288H V3 (Intel Xeon E5-2680 v3)**

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>110</th>
</tr>
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<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>106</td>
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**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Tested by:** Huawei

**Test date:** Jan-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Score</th>
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<tbody>
<tr>
<td>410.bwaves</td>
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<tr>
<td>416.gamess</td>
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<tr>
<td>482.sphinx3</td>
<td>75.2</td>
</tr>
</tbody>
</table>

**SPECfp®2006 = 110**

### Hardware

- **CPU Name:** Intel Xeon E5-2680 v3
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.30 GHz
- **CPU MHz:** 2500
- **FPU:** Integrated
- **CPU(s) enabled:** 24 cores, 2 chips, 12 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:** 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

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Huawei RH2288H V3 (Intel Xeon E5-2680 v3)

SPECfp2006 = 110  
SPECfp_base2006 = 106

CPU2006 license: 3175  
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L3 Cache: 30 MB I+D on chip per chip  
System State: Run level 3 (multi-user)

Other Cache: None  
Base Pointers: 64-bit

Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
Peak Pointers: 32/64-bit

Disk Subsystem: 1 x 500 GB SATA, 7200 RPM  
Other Software: None

Other Hardware: None  

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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</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 25 17:55:01 2014

This section contains SUT (System Under Test) info as seen by
Continued on next page
Huawei RH2288H V3 (Intel Xeon E5-2680 v3)

SPECfp2006 = 110
SPECfp_base2006 = 106

CPU2006 license: 3175
Test sponsor: Huawei
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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
  caution.)
    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: 263720556 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 Jan 25 17:53

SPEC is set to: /spec15
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/mapper/rhel-root ext4 439G 21G 396G 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 Insyde Corp. 1.19 10/10/2014

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SPEC CFP2006 Result

Huawei RH2288H V3 (Intel Xeon E5-2680 v3)

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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 = "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
runspec command invoked through numactl i.e.:
umactl --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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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
<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Optimization Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>433.milc</td>
<td>-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</td>
</tr>
<tr>
<td>470.lbm</td>
<td>basepeak = yes</td>
</tr>
<tr>
<td>482.sphinx3</td>
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<td>C++ benchmarks:</td>
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<tr>
<td>444.namd</td>
<td>-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</td>
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<tr>
<td>447.dealII</td>
<td>basepeak = yes</td>
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<tr>
<td>450.soplex</td>
<td>basepeak = yes</td>
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<td>453.povray</td>
<td>-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</td>
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<td>Fortran benchmarks:</td>
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<td>437.leslie3d</td>
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<td>465.tonto</td>
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Benchmarks using both Fortran and C:

<table>
<thead>
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<th>Optimization Flags</th>
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<tr>
<td>436.cactusADM</td>
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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

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