Huawei CH222 V3 (Intel Xeon E5-2667 v3)

**SPECfp®2006 = 111**

**SPECfp_base2006 = 107**

**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Tested by:** Huawei

**Test date:** May-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Jun-2014

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**Hardware**

- **CPU Name:** Intel Xeon E5-2667 v3
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.60 GHz
- **CPU MHz:** 3200
- **FPU:** Integrated
- **CPU(s) enabled:** 16 cores, 2 chips, 8 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 14.0.0.080 of Intel C++ Studio XE for Linux;
  Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
- **Auto Parallel:** Yes
- **File System:** ext4

---

**CONTINUE ON NEXT PAGE**
## SPEC CFP2006 Result

### Huawei CH222 V3 (Intel Xeon E5-2667 v3)

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

### System Information
- **L3 Cache**: 20 MB I+D on chip per chip
- **Other Cache**: None
- **Memory**: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
- **Disk Subsystem**: 1 x 300 GB SAS, 10K RPM
- **Other Hardware**: None

**System State**: Run level 3 (multi-user)

**Base Pointers**: 64-bit

**Peak Pointers**: 32/64-bit

### 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>
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<tbody>
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<td>84.1</td>
<td>233</td>
<td>83.5</td>
<td>232</td>
<td>83.8</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 /spec/config/sysinfo.rev6818
- $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
  - running on localhost.localdomain Sun May 10 13:15:37 2015

This section contains SUT (System Under Test) info as seen by
Continued on next page
Huawei CH222 V3 (Intel Xeon E5-2667 v3)  

**SPEC CFP2006 Result**

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>107</td>
</tr>
</tbody>
</table>

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

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 E5-2667 v3 @ 3.20GHz
- 2 "physical id"s (chips)
- 16 "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 : 8
  - siblings : 8
  - physical 0: cores 0 1 2 3 4 5 6 7
  - physical 1: cores 0 1 2 3 4 5 6 7
  - cache size : 20480 KB

From /proc/meminfo
- MemTotal: 263721488 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="7.0.0"
  - 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)
  - systemd-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 May 10 02:59

SPEC is set to: /spec

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 259G 135G 111G 55% /

Additional information from dmidecode:
- BIOS Insyde Corp. 1.16 09/02/2014
- Memory:
  - 8x NO DIMM NO DIMM 3 rank
  - 8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 1 rank
  - 8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

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Huawei
Huawei CH222 V3 (Intel Xeon E5-2667 v3)

SPECfp2006 = 111
SPECfp_base2006 = 107

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

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,1,0"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"
OMP_NUM_THREADS = "16"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>
The Huawei CH121 V3 and Huawei CH222 V3 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
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64

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Huawei CH222 V3 (Intel Xeon E5-2667 v3)

**SPECfp2006 = 111**

**SPECfp_base2006 = 107**

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<thead>
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<td>Sep-2014</td>
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</tr>
</thead>
<tbody>
<tr>
<td>Huawei</td>
<td>Jun-2014</td>
</tr>
</tbody>
</table>

### Base Portability Flags (Continued)

- `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 CH222 V3 (Intel Xeon E5-2667 v3)

SPECfp2006 = 111
SPECfp_base2006 = 107

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

Test date: May-2015
Hardware Availability: Sep-2014
Software Availability: Jun-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) -unroll12
-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) -unroll12
-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

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## Huawei CH222 V3 (Intel Xeon E5-2667 v3)

### SPEC CFP2006 Result

| SPECfp2006 = | 111 |
| SPECfp_base2006 = | 107 |

**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
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### Peak Optimization Flags (Continued)

- 454.calculix: `-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-llp32 -ansi-alias`
- 481.wrf: `basepeak = yes`

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The flags files that were used to format this result can be browsed at


You can also download the XML flags sources by saving the following links:


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For other inquiries, please contact webmaster@spec.org.

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