Huawei CH226 V3 (Intel Xeon E5-2697 v4)

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<th>SPECint</th>
<th>SPECint_rate_base2006</th>
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<tbody>
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</table>

SPEC has determined that this result is non-compliant with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by SPEC CPU rule 1.3.2 and the SPEC Open Systems Group policy on general availability.

Hardware:
- CPU Name: Intel Xeon E5-2697 v4
- CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
- CPU MHz: 2300
- FPU: Integrated
- CPU(s) enabled: 36 cores, 2 chips, 18 cores/chip, 2 threads/core
- 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
- L3 Cache: 45 MB I+D on chip per chip
- Other Cache: None
- Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
- Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
- Other Hardware: None

Software:
- Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo) 3.10.0-327.el7.x86_64
- Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux
- File System: xfs
- System State: Run level 3 (multi-user)
- Base Pointers: 32-bit
- Peak Pointers: 32/64-bit
- Other Software: MicroQuill SmartHeap V10.2

Test date: May-2016
Test sponsor: Huawei
Hardware Availability: Mar-2016
Software Availability: Aug-2015
SPEC CPU2006 license: 3175
Huawei

Huawei CH226 V3 (Intel Xeon E5-2697 v4)

SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

CPU2006 license: 3175
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Software Availability: Aug-2015

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Results Table

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</table>

Submitt Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS configuration:
- Set Power Efficiency Mode to Performance
- Set Snoop Mode to COD mode
- Set Patrol Scrub to Disable

Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Mon May 16 07:30:32 2016

This section contains SUT (System Under Test) info as seen by

Continued on next page
Huawei CH226 V3 (Intel Xeon E5-2697 v4)

Huawei

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

Test date: May-2016
Hardware Availability: Mar-2016
Software Availability: Aug-2015

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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 E5-2697 v4 @ 2.30GHz
2 "physical id"s (chips)
72 "processors"
cores, siblings (Caution: counting these is # and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 18
siblings : 36
physical 0: cores 0 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 2 3 4 8 9 0 11 16 17 18 19 20 24 25 26 27
cache size : 23040 KB

From /proc/meminfo
MemTotal:       263562532 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:G A:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

uname -a:
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29
EDT 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 13 07:15

SPEC is set to: /spec16

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 535G 152G 383G 29% /

Continued on next page
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Platform Notes (Continued):

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. 3.09 02/22/2016
Memory:
8x NO DIMM NO DIMM 3 rank
8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
tcc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks:
tcc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by SPEC CPU rule 1.3.2 and the SPEC Open Systems Group policy on general availability.

---

**Base Portability Flags**

- 400.perlbench: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX -IA32`
- 401.bzip2: `-D_FILE_OFFSET_BITS=64`
- 403.gcc: `-D_FILE_OFFSET_BITS=64`
- 429.mcf: `-D_FILE_OFFSET_BITS=64`
- 445.gobmk: `-D_FILE_OFFSET_BITS=64`
- 456.hmmer: `-D_FILE_OFFSET_BITS=64`
- 458.sjeng: `-D_FILE_OFFSET_BITS=64`
- 462.libquantum: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`
- 464.h264ref: `-D_FILE_OFFSET_BITS=64`
- 471.omnetpp: `-D_FILE_OFFSET_BITS=64`
- 473.astar: `-D_FILE_OFFSET_BITS=64`
- 483.xalancbmk: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`

**Base Optimization Flags**

C benchmarks:
- `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch`
- `-opt-mem-layout-trans=3`

C++ benchmarks:
- `-xCORE-AVX2 -ipo -O3 -xprec-div -opt-prefetch`
- `-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap`

**Base Other Flags**

C benchmarks:
- `-Dalloca=_alloca`

**Peak Compiler Invocation**

C benchmarks (except as noted below):
```
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

400.perlbench: `icc -m64`
Huawei

Huawei CH226 V3 (Intel Xeon E5-2697 v4)

SPEC CINT2006 Result

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

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Peak Compiler Invocation (Continued)

401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafepass1
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafepass1
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
-auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

Continued on next page
Huawei CH226 V3 (Intel Xeon E5-2697 v4)

SPEC CINT2006 Result

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Huawei CH226 V3 (Intel Xeon E5-2697 v4)

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Peak Optimization Flags (Continued)

- **C benchmarks**:
  - 471.Lbm:prof-usepeak,prof-basepeak,par-nom threads=1,par-usepeak
  - 453.mcf:basepeak = yes
  - 454.gobmk:prof-usepeak,par-nom threads=1,par-usepeak
  - 455.libquantum:basepeak = yes
  - 463.libquantum:basepeak = yes
  - 473.astar:basepeak = yes
- **C++ benchmarks**:
  - 483.xalancbmk:basepeak = yes

Non-compliant
**SPEC CINT2006 Result**

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

- [http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.html](http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.html)

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

- [http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.xml](http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.xml)

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

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