Huawei CH222 V3 (Intel Xeon E5-2618L v4)

**SPECint_rate2006 = NC**
**SPECint_rate_base2006 = NC**

CPU2006 license: 3175  
Test sponsor: Huawei  
Tested by: Huawei  
Test date: Jul-2016  
Hardware Availability: Mar-2016  
Software Availability: Mar-2016  

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.

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<td>429.mcf</td>
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<td>473.astar</td>
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<td>483.xalancbmk</td>
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</table>

**Hardware**
- CPU Name: Intel Xeon E5-2618L v4
- CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
- CPU MHz: 2200
- FPU: Integrated
- CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 MB I+D on chip per chip
- Other Cache: None
- Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)
- Disk Subsystem: 1 x 1 TB SATA, 7200 RPM

**Software**
- Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo) 3.10.0-327.el7.x86_64
- Compiler: CIC++: Version 16.0.0.101 of Intel C++ Studio XE for Linux
- Auto Parallel: No
- File System: ext4
- System State: Run level 3 (multi-user)
- Base Pointers: 32-bit
- Peak Pointers: 32/64-bit
- Other Software: Microquill SmartHeap V10.2

Non-Compliant
SPEC CINT2006 Result

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Software Availability: Mar-2016

Other Hardware: None

Results Table

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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit 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 ES mode
Set Patrol Scrub to Disable

Sysinfo program /speccpu/spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Sun Jul 3 07:02:22 2016

Continued on next page
Huawei CH222 V3 (Intel Xeon E5-2618L v4)

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.

Platform Notes (Continued)

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

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2618L v4 @ 2.20GHz
  2 "physical id"s (chips)
  40 "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 : 10
siblings : 20
physical 0: cores 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB

From /proc/meminfo
MemTotal: 263567004 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
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:GA: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 Jun 29 07:30
SPEC is set to: /speccpu/spec16
SPEC CINT2006 Result

Huawei CH222 V3 (Intel Xeon E5-2618L v4)

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CPU2006 license: 3175
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Platform Notes (Continued)

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 591G 44G 517G 8% /

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 where 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, configured at 2133 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz

(End of data from sysinfo program)

General Notes

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

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 -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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

Huawei CH222 V3 (Intel Xeon E5-2618L v4)

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 -DIA32
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=1

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -W1,-z,muldefs -L/sh -lsmartheap

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

Non-Compliant
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.

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:threadsafe(pass 1) -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:threadsafe(pass 1) -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
### SPEC CINT2006 Result

**Huawei**

**Huawei CH222 V3 (Intel Xeon E5-2618L v4)**

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**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Hardware Availability:** Mar-2016

**Tested by:** Huawei

**Software Availability:** Mar-2016

**Test date:** Jul-2016

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### Peak Optimization Flags (Continued)

**429.mcf:** basepeak = yes

- **445.gobmk:**
  - `-xCORE-AVX2` (pass 2)
  - `-prof-gen:threadsafe` (pass 1)
  - `-prof-use` (pass 2)
  - `-par-num-threads=1` (pass 1)
  - `-ansi-alias`
  - `-opt-mem-layout-trans=3`

- **456.hmmer:**
  - `-xCORE-AVX2`
  - `-ipo` (pass 2)
  - `-no-prec-div`
  - `-unroll12`
  - `-auto-ilp32`

- **458.sjeng:**
  - `-xCORE-AVX2` (pass 2)
  - `-prof-gen:threadsafe` (pass 1)
  - `-ipo` (pass 2)
  - `-O3` (pass 2)
  - `-no-prec-div` (pass 2)
  - `-par-num-threads=1` (pass 1)
  - `-prof-use` (pass 2)
  - `-unroll4`
  - `-auto-ilp32`

- **462.libquantum:** basepeak = yes

- **464.h264ref:**
  - `-xCORE-AVX2` (pass 2)
  - `-prof-gen:threadsafe` (pass 1)
  - `-ipo` (pass 2)
  - `-O3` (pass 2)
  - `-no-prec-div` (pass 2)
  - `-par-num-threads=1` (pass 1)
  - `-prof-use` (pass 2)
  - `-unroll12`
  - `-ansi-alias`

**C++ benchmarks:**

- **471.omnetpp:**
  - `-xCORE-AVX2` (pass 2)
  - `-prof-gen:threadsafe` (pass 1)
  - `-ipo` (pass 2)
  - `-O3` (pass 2)
  - `-no-prec-div` (pass 2)
  - `-par-num-threads=1` (pass 1)
  - `-prof-use` (pass 2)
  - `-ansi-alias`
  - `-opt-ra-region-strategy=block`
  - `-Wl,-z,muldefs`
  - `-L/sh -lsmartheap`

- **473.astar:** basepeak = yes

- **483.xalancbmk:** basepeak = yes

### Peak Other Flags

**C benchmarks:**

- **403.gcc:**
  - `-Dalloca=_alloca`
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 <a href="http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2">SPEC CPU rule 1.3.2</a> and the SPEC Open Systems Group policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">general availability</a>.

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

You can also download the XML flags sources by saving the following links:
- http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
- http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.xml

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

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