Huawei

Huawei CH121 V3 (Intel Xeon E5-2618L v4)

SPECint_rate2006 = 839
SPECint_rate_base2006 = 802

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

SPECint_rate_base2006 = 802

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: 512 GB (16 x 32 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)
Disk Subsystem: 1 x 1000 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
Auto Parallel: No
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
## SPEC CINT2006 Result

**Huawei**

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<table>
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### 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 /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Thu Nov 24 10:04:32 2016

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 Continued on next page
Huawei CH121 V3 (Intel Xeon E5-2618L v4)

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Platform Notes (Continued)

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: 527791624 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: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 Nov 24 10:01

SPEC is set to: /spec16
   Filesystem Type Size Used Avail Use% Mounted on
   /dev/sda2  xfs  879G 158G 722G 18%  /

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. 3.32 09/14/2016
Memory:
    8x NO DIMM NO DIMM
    16x Samsung M393A4K40BB1-CRC 32 GB 2 rank 2400 MHz, configured at 2133 MHz

(End of data from sysinfo program)
Huawei

Huawei CH121 V3 (Intel Xeon E5-2618L v4)

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Hardware Availability: Mar-2016
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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
runcspec 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 CompilerInvocation

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

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 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap
Huawei
Huawei CH121 V3 (Intel Xeon E5-2618L v4)  SPECint_rate2006 = 839
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**Base Other Flags**

C benchmarks:

403.gcc: -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
  - 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_LP64

**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

Continued on next page
### Huawei

**Huawei CH121 V3 (Intel Xeon E5-2618L v4)**

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**CPU2006 license:** 3175  
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### Peak Optimization Flags (Continued)

- **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

- **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 -O3 -no-prec-div -unroll2 -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) -unroll2 -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) -unroll2 -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/sh -lsmartheap

### Peak Other Flags

- **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

- **C benchmarks:**

- **403.gcc:** -Dalloca=_alloca
## SPEC CINT2006 Result

**Huawei**

**Huawei CH121 V3 (Intel Xeon E5-2618L v4)**

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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 other inquiries, please contact webmaster@spec.org.

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