Huawei

Huawei CH121 V3 (Intel Xeon E5-2630L v3)

**SPECfp®2006 =** 92.9

**SPECfp_base2006 =** 87.5

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### Hardware

- **CPU Name:** Intel Xeon E5-2630L v3
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.90 GHz
- **CPU MHz:** 1800
- **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 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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**Test Sponsor:** Huawei

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

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**Test Date:** Jan-2015

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**CPU2006 license:** 3175

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Continued on next page
Huawei CH121 V3 (Intel Xeon E5-2630L v3)

**SPECfp2006 =** 92.9

**SPECfp_base2006 =** 87.5

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</table>

**Results 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 Tue Jan 6 19:59:37 2015

Continued on next page
Huawei
Huawei CH121 V3 (Intel Xeon E5-2630L v3)

| SPECfp2006 = | 92.9 |
| SPECfp_base2006 = | 87.5 |

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

Test date: Jan-2015  
Hardware Availability: Sep-2014  
Software Availability: Sep-2014

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 E5-2630L v3 @ 1.80GHz
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:       263721480 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 6 14:24

SPEC is set to: /spec15
Filesystem Type Size Used Avail Use% Mounted on
/dev/sdb1 ext4 237G 11G 215G 5% /

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.

Continued on next page
Huawei CH121 V3 (Intel Xeon E5-2630L v3)  

SPECfp2006 = 92.9  
SPECfp_base2006 = 87.5

Platform Notes (Continued)

BIOS Insyde Corp. 1.19 10/10/2014  
Memory:  
8x NO DIMM NO DIMM 3 rank  
8x Samsung M393A2G40DB0-CPB 16 GB 1 rank 2133 MHz, configured at 1867 MHz  
8x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1867 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 = "16"  

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  
runcspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>  
The Huawei CH121 V3 and Huawei CH222 V3 models 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

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SPEC CFP2006 Result
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Huawei CH121 V3 (Intel Xeon E5-2630L v3)

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CPU2006 license: 3175
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Hardware Availability: Sep-2014
Software Availability: Sep-2014

Base Portability Flags (Continued)

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
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
Huawei
Huawei CH121 V3 (Intel Xeon E5-2630L v3) | SPECfp2006 = 92.9
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CPU2006 license: 3175
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Tested by: Huawei

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
433.milc: -xCORE-AVX2(pas 2) -prof-gen(pas 1) -ipo(pas 2)
-03(pas 2) -no-prec-div(pas 2) -prof-use(pas 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -xCORE-AVX2(pas 2) -prof-gen(pas 1) -ipo(pas 2)
-03(pas 2) -no-prec-div(pas 2) -prof-use(pas 2)
-fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pas 2) -prof-gen(pas 1) -ipo(pas 2)
-03(pas 2) -no-prec-div(pas 2) -prof-use(pas 2) -unroll4
-ansi-alias

Fortran benchmarks:
410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pas 2) -prof-gen(pas 1) -ipo(pas 2)
-03(pas 2) -no-prec-div(pas 2) -prof-use(pas 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pas 2) -prof-gen(pas 1) -ipo(pas 2)
-03(pas 2) -no-prec-div(pas 2) -prof-use(pas 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pas 2) -prof-gen(pas 1) -ipo(pas 2)
-03(pas 2) -no-prec-div(pas 2) -prof-use(pas 2)
-inline-cALLOC -opt-mALLOC-options=3 -auto -unroll4

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Huawei

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

- 435.gromacs: basepeak = yes
- 436.cactusADM: basepeak = yes
- 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-V1.1.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-V1.1.xml

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