Huawei

Huawei CH220 V3 (Intel Xeon E5-2623 v4)

| SPECfp\textsuperscript{\_rate2006} = 363 |
| SPECfp\_rate\_base2006 = 357 |

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

Hardware

| CPU Name: Intel Xeon E5-2623 v4 |
| CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz |
| CPU MHz: 2600 |
| FPU: Integrated |
| CPU(s) enabled: 8 cores, 2 chips, 4 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 |

Software

| Operating System: SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default |
| Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux |
| Auto Parallel: No |
| File System: ext4 |
| System State: Run level 3 (multi-user) |

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Test sponsor: Huawei
Tested by: Huawei
Test date: Dec-2016
Hardware Availability: Mar-2016
Software Availability: Dec-2015

L3 Cache: 10 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (8 x 32 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)
Disk Subsystem: 1 x 600 GB SAS,10000 RPM
Other Hardware: None
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: None

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</tbody>
</table>

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

Submit Notes
The config file option 'submit' was used.

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

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Huawei CH220 V3 (Intel Xeon E5-2623 v4)

**SPEC fp_rate2006 = 363**

**SPEC fp_rate_base2006 = 357**

- **CPU2006 license:** 3175
- **Test sponsor:** Huawei
- **Tested by:** Huawei
- **Test date:** Dec-2016
- **Hardware Availability:** Mar-2016
- **Software Availability:** Dec-2015

**Platform Notes (Continued)**

$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667bSa285932ceab81e28219e1
running on linux-suse Sun Dec 4 04:02:30 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 E5-2623 v4 @ 2.60GHz
- 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 : 4
- siblings : 8
- physical 0: cores 0 1 2 3
- physical 1: cores 0 1 2 3
- cache size : 10240 KB

From /proc/meminfo

- MemTotal: 264273188 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*

- SuSE-release:
  - SUSE Linux Enterprise Server 12 (x86_64)
  - VERSION = 12
  - PATCHLEVEL = 1
  - # This file is deprecated and will be removed in a future service pack or release.
  - # Please check /etc/os-release for details about this release.
  - os-release:
    - NAME="SLES"
    - VERSION="12-SP1"
    - VERSION_ID="12.1"
    - PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
    - ID=sles
    - ANSI_COLOR="0;32"
    - CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:

(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 3 03:12

SPEC is set to: /spec16

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 551G 39G 511G 8% /

Additional information from dmidecode:

Continued on next page
Huawei CH220 V3(Intel Xeon E5-2623 v4)

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| CPU2006 license: | 3175 |
| Test date:       | Dec-2016 |
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| Tested by:       | Huawei |

**Platform Notes (Continued)**

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. 3.31 08/22/2016

Memory:
- 8x Micron 36ASF4G72PZ-2G3B1 32 GB 2 rank 2400 MHz, configured at 2133 MHz
- 8x NO DIMM NO DIMM

(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.:

```
umactl --interleave=all runspec <etc>
```

**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
```

Continued on next page
Huawei
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Base Portability Flags (Continued)

434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nfor_main
436.cactusADM: -DSPEC_CPU_LP64 -nfor_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
454.calculix: -DSPEC_CPU_LP64 -nfor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -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 -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

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 CH220 V3 (Intel Xeon E5-2623 v4)

SPECfp_rate2006 = 363
SPECfp_rate_base2006 = 357

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

Test date: Dec-2016
Hardware Availability: Mar-2016
Software Availability: Dec-2015

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes
470.lbm: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -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) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -fno-alias -auto-ilm32

447.dealII: basepeak = yes
450.soplex: basepeak = yes
453.povray: -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) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes
416.gamess: -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
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: basepeak = yes
465.tonto: -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
-inline-calloc -opt-malloc-options=3

Continued on next page
Huawei

Huawei CH220 V3(Intel Xeon E5-2623 v4)

| SPECfp_rate2006 | 363 |
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CPU2006 license: 3175  
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Software Availability: Dec-2015

**Peak Optimization Flags (Continued)**

Benchmarks using both Fortran and C:

- **435.gromacs**: -xCORE-AVX2(pass 2) -prof-gen:threadsafepass 1  
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
  -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)  
  -prof-use(pass 2) -opt-prefetch -auto-ilp32

- **436.cactusADM**: basepeak = yes

- **454.calculix**: basepeak = yes

- **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-ic16.0-official-linux64.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/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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