



SPEC[®] CFP2006 Result

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Huawei

SPECfp[®]_rate2006 = NC

Huawei 2488H V5 (Intel Xeon Gold 5115)

SPECfp_rate_base2006 = NC

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Aug-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017

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

Copies

410.bwaves

416.gamess

433.milc

434.zeusmp

435.gromacs

436.cactusADM

437.leslie3d

444.namd

447.dealII

450.soplex

453.povray

454.calculix

459.G

465.tonto

470.lbm

481.wrf

482.sphinx3



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Hardware

CPU Name: Intel Xeon Gold 5115
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: 13.75 MB I+D on chip per chip
 Other Cache: None
 Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2666V-R, running at 2400 MHz)
 Disk Subsystem: 2 x 900 GB SAS, 15000 RPM
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 SP2
 4.4.21-69-default
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++
 Compiler for Linux;
 Fortran: Version 17.0.3.191 of Intel Fortran
 Compiler for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 5 (multi user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Non-Compliant



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	80	NC	NC	NC	NC	NC	NC	40	NC	NC	NC	NC	NC	NC
416.gamess	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
433.milc	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
434.zeusmp	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
435.gromacs	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
436.cactusADM	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
437.leslie3d	80	NC	NC	NC	NC	NC	NC	40	NC	NC	NC	NC	NC	NC
444.namd	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
447.dealII	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
450.soplex	80	NC	NC	NC	NC	NC	NC	40	NC	NC	NC	NC	NC	NC
453.povray	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
454.calculix	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
459.GemsFDTD	80	NC	NC	NC	NC	NC	NC	40	NC	NC	NC	NC	NC	NC
465.tonto	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
470.lbm	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
481.wrf	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
482.sphinx3	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC

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"
Turbo mode set with:
cpupower -c all frequency-set -g performance



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Platform Notes

Sysinfo program /home/cpu2006/config/sysinfo.rev.6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51e18d7f9825cbe290c1)
running on linux-5bjr Wed Aug 9 15:11:11 2017

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) Gold 5115 CPU @ 2.40GHz

4 "physical id"s (chips)

80 "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 1 2 3 4 8 9 10 11 12

physical 2: cores 0 2 3 4 8 9 10 11 12

physical 3: cores 0 1 2 3 4 8 9 10 11 12

cache size: 4080 kB

From /proc/meminfo

MemTotal: 90973168 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

cat /etc/os-release -d

SUSE Linux Enterprise Server 12 SP2

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

SuSE release:

SUSE Linux Enterprise Server 12 (x86_64)

VERSION = 12

PATCHLEVEL = 2

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"

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Platform Notes (Continued)

```
VERSION="12-SP2"
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"
```

```
uname -a:
Linux linux-5bjr 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
(9464f67) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 5 Aug 9 14:39
```

```
SPEC is set to: /home/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda4        xfs   1.6T  23G  1.6T   2% /home
```

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 INSYSR Corp. 0.23 06/12/2017
```

```
Memory:
```

```
24x Dimm 1A84CR7AFR4N-VK 32 GB 2 rank 2666 MHz, configured at 2400 MHz
8x NO DIMM NO DIMM
```

(from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

```
LD_LIBRARY_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"
```

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

Transparent Huge Pages enabled by default

Filesystem page cache cleared with:

```
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
```

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General Notes (Continued)

runspec command invoked through numactl i.e. :
numactl --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
411.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.znsmplib: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
440.soplex: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.pray: -DSPEC_CPU_LP64
454.cupcculix: -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



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Base Optimization Flags

C benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3`

C++ benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3`

Fortran benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch`

Benchmarks using both Fortran and C:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3`

Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks (except as noted below):

`icc -m64`

`450.soplex: icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

Peak Portability Flags

`410.bwaves: -DSPEC_CPU_LP64`

`416.gamess: -DSPEC_CPU_LP64`

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Peak Portability Flags (Continued)

433.milc: -DSPEC_CPU_LP64
 434.zeusmp: -DSPEC_CPU_LP64
 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
 437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 447.dealII: -DSPEC_CPU_LP64
 450.soplex: -D_FILE_OFFSET_BITS=64
 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 -D__CPU_CASE_FLAG -DSPEC_CPU_LINUX
 482.sphinx3: -DSPEC_CPU_LP64

Peak Optimization Flags

C benchmarks:

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

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -fno-alias -auto-ilp32
 -qopt-mem-layout-trans=3
 447.dealII: basepeak = yes
 450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -qopt-malloc-options=3
 -qopt-mem-layout-trans=3

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Peak Optimization Flags (Continued)

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll14 -qopt-mem-layout-trans=3

Fortran benchmarks:

410.bwaves: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll12 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll14 -auto -inline-calloc
-qopt-malloc-options=3

Benchmarks using both Fortran and C:

435.ghostscript: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -qopt-prefetch -auto-ilp32
-qopt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes



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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-evF.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-SKL-V1.6.html>

You can also download the XML flags source files using the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-evF.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-SKL-V1.6.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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