SPEC® CFP2006 Result

Huawei
Huawei RH1288 V3 (Intel Xeon E5-2609 v4)

<table>
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<tr>
<th>SPECfp(^\circ) _rate2006 = NC</th>
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<tr>
<td>SPECfp_rate_base2006 = NC</td>
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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

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Non-Compliant
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### Hardware
- **CPU Name:** Intel Xeon E5-2609 v4
- **CPU Characteristics:**
  - CPU MHz: 1700
  - 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
  - L3 Cache: 20 MB I+D on chip per chip
  - Other Cache: None
- **Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 1866 MHz)
- **Disk Subsystem:** 1 x 500 GB SATA, 7200 RPM
- **Other Hardware:** None

### Software
- **Operating System:** Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.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:** 32/64-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** None
**Huawei**

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</table>

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

**Submit Notes**

A security 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

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Platform Notes (Continued)

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Platform Notes (Continued)

run-level 3 Mar 25 04:13

SPEC is set to: /spec16
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 443G 39G 404G 9% /

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. 3.09 02/22/2016
Memory:
8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz, configured at 1867 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 1867 MHz

(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.:
numactl --interleave=all runspec <etc>

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Base Compiler Invocation

Continued on next page
Huawei

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Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Base Portability Flags

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<td>-DSPEC_CPU_LP64</td>
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<td>435.gromacs</td>
<td>-DSPEC_CPU_LP64 -nofor_main</td>
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<td>482.sphinx</td>
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Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch

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### Base Optimization Flags (Continued)

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

### Peak Compile Invocation

C benchmarks:
- icc -m64

C++ benchmarks:
- icpc -m64

Fortran benchmarks:
- ifort -m64

Benchmarks using both Fortran and C:
- icc -m64 ifort -m64

### Peak Portability Flags

Same as Base Portability Flags

### Peak Optimization Flags

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-ilp32
- 482.sphinx3: basepeak = yes

C++ benchmarks:
- 470.lbm: basepeak = yes
- 433.milc: basepeak = yes

Continued on next page
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Peak Optimization Flags (Continued)

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) --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) --prec-div (pass 2)
-par-num-threads=1 (pass 1) --prof-use (pass 2) --unroll2
--inline-level=1 --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) --unroll14 --auto
--inline-calloc --opt-malloc-options=3

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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes
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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) --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) --prec-div (pass 2)
-par-num-threads=1 (pass 1) --prof-use (pass 2) --unroll2
--inline-level=1 --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) --unroll14 --auto
--inline-calloc --opt-malloc-options=3

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Peak Optimization Flags (Continued)

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.

Tested with SPEC CPU2006 v1.2.
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