Huawei

Huawei RH2288H V3 (Intel Xeon E5-2618L v4)

SPECfpm®_rate2006 = NC
SPECfpm_rate_base2006 = NC

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

Test date: Jul-2016
Hardware Availability: Mar-2016
Software Availability: Mar-2016

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by <a href="http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2">SPEC CPU rule 1.3.2</a> and the SPEC Open Systems Group policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">general availability</a>.

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. GemsFDTD |
| 465. toonto |
| 4.9. lbm |
| 481. wrf |
| 482. sphinx3 |
SPEC CFP2006 Result

Huawei

Huawei RH2288H V3 (Intel Xeon E5-2618L v4)

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

CPU2006 license: 3175
Test sponsor: Huawei
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SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by SPEC CPU rule 1.3.2 and the SPEC Open Systems Group policy on general availability.

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: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)
Disk Subsystem: 1 x 1 TB 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;
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)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: None
SPEC CFP2006 Result

Huawei

Huawei RH2288H V3 (Intel Xeon E5-2618L v4)

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

CPU2006 license: 3175
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Results Table

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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 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"
Huawei

Huawei RH2288H V3 (Intel Xeon E5-2618L v4)

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

CPU2006 license: 3175
Test date: Jul-2016
Test sponsor: Huawei
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SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by <a href="http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2">SPEC CPU rule 1.3.2</a> and the SPEC Open Systems Group policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">general availability</a>.

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Snoop Mode to ES mode
Set Patrol Scrub to Disable
Sysinfo program /speccpu/spec16/config/sysinfo.rev.6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb866 f6a285f2dceab81e28219e1
running on localhost.localdomain Sun Jul 3 19:04:54 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 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:       263567004 kB
Pages_Total:       0
Files_Total:       0
HugePages_Total:       0
HugePages_Free:       0
HugePages_Rsvd:       0
HugePages_Lru:       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)

Continued on next page

Non-Compliant
Huawei RH2288H V3 (Intel Xeon E5-2618L v4)

<table>
<thead>
<tr>
<th>CPU2006 license: 3175</th>
<th>Test date: Jul-2016</th>
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<tr>
<td>Test sponsor: Huawei</td>
<td>Hardware Availability: Mar-2016</td>
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</table>

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Platform Notes (Continued)

```
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
un-level 3 Jun 29 07:30

SPEC is set to: /speccpu/spec16
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda2      ext4  591G   44G  517G  8% /

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 NO DIMM NO DIMM  3 rank
    8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz, configured at 2133 MHz
    8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz

(End of data from sysinfo program)
```

General Notes

Environment variables set by runspec before the start of the run:
```
LD_LIBRARY_PATH = "/speccpu/spec16/libs/32:/speccpu/spec16/libs/64:/speccpu/spec16/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB RedHat EL 7.1
Transparent Huge Pages enabled with:
    echo always > /sys/kernel/mm/transparent_hugepage/enabled
File system page cache cleared with:
    echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
    numactl --interleave=all runspec <etc>
```
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Continued on next page
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---

**Base Optimization Flags (Continued)**

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

---

**Peak Compiler Invocation**

C benchmarks:
- icc -m64

C++ benchmarks (except as noted below):
- icpc -m64

450.soplex:
- icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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
- 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

---

Non-Compliant
Huawei RH2288H V3 (Intel Xeon E5-2618L v4)

| SPECfp_rate2006 = | NC |
| SPECfp_rate_base2006 = | NC |

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

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### Peak Portability Flags (Continued)

- 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 -DSPEC_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: -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-llp32
- 447.dealII: basepeak = yes
- 450.soplex: -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) -opt-malloc-options=3
- 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:**

Continued on next page
SPEC CFP2006 Result

Huawei

Huawei RH2288H V3 (Intel Xeon E5-2618L v4)

CPU2006 license: 3175
Test sponsor: Huawei
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Peak Optimization Flags (Continued)

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) -unroll12
            -inline-level=0 -scalar-rep-

437.leslie3d: 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

Benchmarks using both Fortran and C:

435.gromacs: -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) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes
437.calculix: basepeak = yes
481.mpf: 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
Huawei RH2288H V3 (Intel Xeon E5-2618L v4)

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
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