**SPEC® CFP2006 Result**

**Huawei**

Huawei RH5885 V3 (Intel Xeon E7-4850 v2)

<table>
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<tr>
<th>SPECfp®_rate2006</th>
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<tr>
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**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Test date:** May-2014  
**Hardware Availability:** Feb-2014  
**Software Availability:** Nov-2013

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by Huawei or Intel.

<table>
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<td>410.bwaves</td>
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<tr>
<td>416.gamess</td>
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Non-Compliant
Huawei RH5885 V3 (Intel Xeon E7-4850 v2)

| SPEC fp_rate2006 | NC |
| SPEC fp_rate base2006 | NC |

CPU2006 license: 3175  Test date: May-2014
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### Hardware
- **CPU Name:** Intel Xeon E7-4850 v2
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.80 GHz
- **CPU MHz:** 2300
- **FPU:** Integrated
- **CPU(s) enabled:** 48 cores, 4 chips, 12 cores/chip, 2 threads/core
- **CPU(s) orderable:** 2, 4 chips
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 256 KB I+D on chip per chip
- **L3 Cache:** 24 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC)
- **Disk Subsystem:** 2 x 600 GB SAS, 10K RPM
- **Other Hardware:** None

### Software
- **Operating System:** Red Hat Enterprise Linux Server release 6.5 (Santiago)
- **Compiler:** C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux; Fortran: Version 14.0.0.080 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 RH5885 V3 (Intel Xeon E7-4850 v2)

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

CPU2006 license: 3175
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Results Table

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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"
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Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Lock_step to disabled
Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on rh5885v3 Thu May 29 23:54:53 2014

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 E7-4850 v2 @ 2.30GHz
4 "physical id"s (chips)
96 "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
siblings : 1
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size: 24576 KB

From /proc/meminfo
MemTotal: 264352484 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
uname -a:

Continued on next page
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Platform Notes (Continued)

Linux rh5885v3 2.6.32-431.el6.x86_64 #1 SMP Thu Nov 10 22:19:54 EST 2013
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 May 29 07:38
SPEC is set to: /spec
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda3      ext4  534G  106G  401G  21% /

Additional information from dmidecode:
BIOS American Megatrends Inc. BLISV015 03/7/2014
Memory:
16x 16 GB
16x Hynix HMT42GR7AFR4C-PB 1333 MHz 2 rank
32x NO DIMM NO DIMM

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of memory is 256 GB and the dmidecode description should have one line reading as:
16x Hynix HMT42GR7AFR4C-PB 16 GB 1333 MHz 2 rank

General Notes

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

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_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>
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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
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 -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:
-xAVX  -ipo -03 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

Non-Compliant
Huawei

Huawei RH5885 V3 (Intel Xeon E7-4850 v2)

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SPECfp_rate_base2006 = NC

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### Base Optimization Flags (Continued)

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

Fortran benchmarks:
- `-xAVX -ipo -O3 -no-prec-div -opt-prefetch`

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

### Peak Compiler Invocation

C benchmarks (except as noted below):
- `icc -m64`

482.sphinx3: `icc -m32`

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

450.soplex: `icc -m32`

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`
Huawei RH5885 V3 (Intel Xeon E7-4850 v2)

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<td>481.wrf</td>
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### Peak Optimization Flags

**C benchmarks:**

- 433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -auto-ilp32
- 470.lbm: -basepeak = yes
- 482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3 -unroll2

**C++ benchmarks:**

- 444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32
- 447.dealII: basepeak = yes

- 450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -opt-malloc-options=3

Continued on next page
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Peak Optimization Flags (Continued)

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ips(pass 2) -03(pass 2)
            -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
            -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
            -inline-level -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -03 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
            -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
            -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
            -prof-use(pass 2) -opt-prefetch -auto-ilp32

447.calculix: basepeak = yes

451.wrf: -xAVX -ipo -03 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
Huawei

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You can also download the XML flags sources by saving the following links:

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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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