Huawei RH5885H V3 (Intel Xeon E7-8894 v4)  

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<th>SPECfp_rate2006 = Not Run</th>
<th>SPECfp_rate_base2006 = 2460</th>
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CPU2006 license: 3175  
Test sponsor: Huawei  
Tested by: Huawei  

**Hardware**  
- **CPU Name:** Intel Xeon E7-8894 v4  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.40 GHz  
- **CPU MHz:** 2400  
- **FPU:** Integrated  
- **CPU(s) enabled:** 96 cores, 4 chips, 24 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 core

**Software**  
- **Operating System:** SUSE Linux Enterprise Server 12 (x86_64) SP1  
  Kernel 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:** xfs  
- **System State:** Run level 5 (multi-user)
Huawei RH5885H V3 (Intel Xeon E7-8894 v4)

**SPEC CFP2006 Result**

**Huawei**

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**SPECfp_rate2006** = **Not Run**

**SPECfp_rate_base2006** = **2460**

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**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Tested by:** Huawei

**Test date:** Jan-2017

**Hardware Availability:** Feb-2017

**Software Availability:** Dec-2015

**L3 Cache:** 60 MB I+D on chip per chip

**Other Cache:** None

**Memory:** 512 GB (32 x 16 GB 2Rx8 PC4-2400T-R, running at 1600 MHz)

**Disk Subsystem:** 2 x 600 GB SAS, 10K RPM

**Other Hardware:** None

**Base Pointers:** 32/64-bit

**Peak Pointers:** 32/64-bit

**Other Software:** None

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### Results Table

| Benchmark | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Base | Copies | Seconds | Ratio | Seconds | Ratio | Peak | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
|-----------|--------|---------|-------|---------|-------|---------|-------|------|--------|---------|-------|---------|-------|------|--------|---------|-------|---------|-------|---------|-------|---------|-------|
| 410.bwaves | 192 | 1558 | 1670 | 1560 | 1670 | **1558** | 1670 |
| 416.gamess | 192 | 1073 | 3500 | **1069** | **3520** | 1057 | 3560 |
| 433.milc | 192 | 1138 | 1550 | **1138** | **1550** | 1138 | 1550 |
| 434.zeusmp | 192 | 647 | 2700 | 638 | 2740 | **646** | **2710** |
| 435.gromacs | 192 | 319 | 4300 | **320** | **4280** | 321 | 4270 |
| 436.cactusADM | 192 | **766** | **3000** | 765 | 3000 | 766 | 3000 |
| 437.leslie3d | 192 | **1569** | **1150** | 1566 | 1150 | 1572 | 1150 |
| 444.namd | 192 | 508 | 3030 | **505** | **3050** | 505 | 3050 |
| 447.dealII | 192 | 423 | 5190 | **414** | **5300** | 414 | 5300 |
| 450.soplex | 192 | 1308 | 1220 | **1311** | **1220** | 1311 | 1220 |
| 453.povray | 192 | 221 | 4630 | 220 | 4650 | **220** | **4650** |
| 454.calculix | 192 | **374** | **4230** | 376 | 4220 | 372 | 4250 |
| 459.GemsFDTD | 192 | 1876 | 1090 | **1874** | **1090** | 1868 | 1090 |
| 465.tonto | 192 | **650** | **2910** | 654 | 2890 | 645 | 2930 |
| 470.lbm | 192 | 1207 | 2190 | 1204 | 2190 | **1206** | **2190** |
| 481.wrf | 192 | **1089** | **1970** | 1088 | 1970 | 1090 | 1970 |
| 482.sphinx3 | 192 | 1681 | 2230 | 1672 | 2240 | **1678** | **2230** |

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

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### 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.

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### Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Turbo mode set with:

cputower -c all frequency-set -g performance
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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%
  - Set C-State to C0/C1
  - Sysinfo program /home/spec/config/sysinfo.rev6914
    - $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e8219e1
    - running on RH5885Hv3 Tue Jan 24 02:47:19 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) CPU E7-8894 v4 @ 2.40GHz
  - 4 "physical id"s (chips)
  - 192 "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: 24
    - siblings: 48
    - physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
    - physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
    - physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
    - physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
  - cache size: 30720 KB

- From /proc/meminfo
  - MemTotal: 529086232 kB
  - HugePages_Total: 0
  - Hugepagesize: 2048 kB

- /usr/bin/lsb_release -d
  - SUSE Linux Enterprise Server 12 SP1

- 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"

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Huawei RH5885H V3 (Intel Xeon E7-8894 v4)

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 2460

Platform Notes (Continued)

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 5 Jan 23 18:02

SPEC is set to: /home/spec
Filesystem   Type  Size  Used Avail Use% Mounted on
/dev/sda1    xfs   750G  113G  638G  16% /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 American Megatrends Inc. BLISY102 11/07/2016
Memory:
   64x NO DIMM NO DIMM
   32x Samsung M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz, configured at 1600 MHz

(End of data from sysinfo program)

General Notes

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

Base Compiler Invocation

C benchmarks:
   icc   -m64

C++ benchmarks:
   icpc  -m64

Continued on next page
Huawei RH5885H V3 (Intel Xeon E7-8894 v4)

**Huawei**

**SPEC CFP2006 Result**

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CPU2006 license: 3175
Test date: Jan-2017
Test sponsor: Huawei
Hardware Availability: Feb-2017
Tested by: Huawei
Software Availability: Dec-2015

### Base Compiler Invocation (Continued)

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
- 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

### 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
```
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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-ic16.0-official-linux64.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-V1.2-BDW-RevG.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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