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**Huawei**

Huawei RH5885H V3 (Intel Xeon E7-8890 v3)

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**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Test date:** Mar-2015

**Hardware Availability:** May-2015

**Tested by:** Huawei

**Software Availability:** Sep-2014

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<tr>
<th>Suite</th>
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<td>437.leslie3d</td>
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<td>444.namd</td>
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<td>447.dealII</td>
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<td>454.calculix</td>
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<tr>
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</tr>
<tr>
<td>482.sphinx3</td>
<td></td>
<td>144</td>
</tr>
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</table>

**Hardware**

**CPU Name:** Intel Xeon E7-8890 v3

**CPU Characteristics:** Intel Turbo Boost Technology up to 3.30 GHz

**CPU MHz:** 2500

**FPU:** Integrated

**CPU(s) enabled:** 72 cores, 4 chips, 18 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:** Red Hat Enterprise Linux Server release 7.0 (Maipo)

**Compiler:** C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;

**Fortran:** Version 15.0.0.090 of Intel FORTRAN Studio XE for Linux

**Auto Parallel:** No

**File System:** ext4

Continued on next page
Huawei

Huawei RH5885H V3 (Intel Xeon E7-8890 v3)

SPEC CFP2006 Result

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Huawei

Huawei RH5885H V3 (Intel Xeon E7-8890 v3)

SPECfp_rate2006 = Not Run

SPECfp_rate_base2006 = 2000

CPU2006 license: 3175
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L3 Cache: 45 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 2 x 300 GB SAS, 10K RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
---------- |-------- |--------- |------- |--------- |------- |--------- |------- |
410.bwaves | 144 | 1281 | 1530 | 1285 | 1520 | 1282 | 1530 |
416.gamess | 144 | 1179 | 2390 | 1148 | 2460 | 1232 | 2290 |
433.milc | 144 | 914 | 1450 | 914 | 1450 | 914 | 1450 |
434.zeusmp | 144 | 581 | 2260 | 583 | 2250 | 581 | 2250 |
435.gromacs | 144 | 356 | 2890 | 358 | 2870 | 359 | 2860 |
436.cactusADM | 144 | 690 | 2490 | 691 | 2490 | 692 | 2490 |
437.leslie3d | 144 | 1290 | 1050 | 1291 | 1050 | 1290 | 1050 |
444.namd | 144 | 517 | 2230 | 517 | 2230 | 518 | 2230 |
447.dealII | 144 | 453 | 3640 | 443 | 3720 | 449 | 3670 |
450.soplex | 144 | 1129 | 1060 | 1132 | 1060 | 1134 | 1060 |
453.povray | 144 | 231 | 3310 | 232 | 3300 | 232 | 3300 |
454.calculix | 144 | 323 | 3680 | 323 | 3680 | 321 | 3700 |
459.GemsFDTD | 144 | 1533 | 996 | 1531 | 998 | 1530 | 998 |
465.tonto | 144 | 611 | 2320 | 608 | 2330 | 611 | 2320 |
470.lbm | 144 | 1019 | 1940 | 1020 | 1940 | 1020 | 1940 |
481.wrf | 144 | 889 | 1810 | 890 | 1810 | 889 | 1810 |
482.sphinx3 | 144 | 1569 | 1790 | 1580 | 1780 | 1581 | 1770 |

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

Submit Notes

The numacl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numacl 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
Huawei RH5885H V3 (Intel Xeon E7-8890 v3)

**SPECfp_rate2006 = Not Run**

**SPECfp_rate_base2006 = 2000**

**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 DRAM Maintenance to Manual
- Set DRAM Maintenance Mode to pTRR
- Set Patrol Scrub to Enabled
- Set Memory Power Saving to disabled

Sysinfo program /spec/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on RH5885HV3 Sat Mar 14 18:28:23 2015

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 E7-8890 v3 @ 2.50GHz
- 4 "physical id"s (chips)
- 144 "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 : 18
- siblings : 36
- physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
- physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
- physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
- physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

- cache size : 46080 KB

From /proc/meminfo
- MemTotal:  1056464428 kB
- HugePages_Total: 0
- Hugepagesize:  2048 kB

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

- NAME="Red Hat Enterprise Linux Server"
- VERSION=7.0 (Maipo)"
- ID="rhel"
- ID_LIKE="fedora"
- VERSION_ID=7.0
- PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
- ANSI_COLOR="0;31"
- CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
- redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
- system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
- system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
Linux RH5885HV3 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014

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Huawei

Huawei RH5885H V3 (Intel Xeon E7-8890 v3)

SPEC CFP2006 Result

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Huawei RH5885H V3 (Intel Xeon E7-8890 v3)

Platform Notes (Continued)

x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Mar 14 12:04
SPEC is set to: /spec
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda5 ext4 481G 73G 384G 16% /spec
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. BLISV701 3/5/2015
Memory:
32x NO DIMM NO DIMM
64x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1600 MHz

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of memory is 1 TB and the dmidecode description should have two lines reading as:
32x NO DIMM NO DIMM
64x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1600 MHz

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 i5-4670K CPU + 16GB memory using RedHat EL 7.0
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
runcspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
  icc -m64

C++ benchmarks:
  icpc -m64

Fortran benchmarks:
  ifort -m64

Continued on next page
Huawei RH5885H V3 (Intel Xeon E7-8890 v3)

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### Base Compiler Invocation (Continued)

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
```

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

[http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html](http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html)

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

- [http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.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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