Huawei RH2288H V3 (Intel Xeon E5-2637 v3)

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

CPU Characteristics:
- Intel Turbo Boost Technology up to 3.70 GHz
- 8 cores, 2 chips, 4 cores/chip
- 1.2 GHz

Hardware Availability: Sep-2014
Software Availability: Sep-2014

Software:
- Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64
- 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: Yes
- File System: ext4

Hardware:
- CPU Name: Intel Xeon E5-2637 v3
- CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
- CPU MHz: 3500
- FPU: Integrated
- CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
- CPU(s) orderable: 1.2 GHz
- Primary Cache: 32 KB I + 32 KB D on chip per core
- Secondary Cache: 256 KB I+D on chip per core

SPECfp2006 = 106
SPECfp_base2006 = 103

Huawei
RESULTS TABLE

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<td>89.0</td>
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</tbody>
</table>

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

Operating System Notes

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

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Custom
Set Snoop Mode to HS
Set Hyper-Threading to Disabled
Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Sat Jan 10 09:28:36 2015

This section contains SUT (System Under Test) info as seen by
Continued on next page
Huawei RH2288H V3 (Intel Xeon E5-2637 v3)

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

**Test date:** Jan-2015
**Hardware Availability:** Sep-2014
**Software Availability:** Sep-2014

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**Platform Notes (Continued)**

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 E5-2637 v3 @ 3.50GHz
- 2 "physical id"s (chips)
- 8 "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: 4
- siblings: 4
- physical 0: cores 0 1 4 5
- physical 1: cores 0 1 4 5
- cache size: 15360 KB

From /proc/meminfo
- MemTotal: 263722408 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

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

- os-release:
  - 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 localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jan 10 05:00
```

**SPEC is set to:** /spec15

Filesystem | Type | Size | Used | Avail | Use% | Mounted on
--- | --- | --- | --- | --- | --- | ---
/dev/sdb1  | ext4  | 237G | 11G  | 215G | 5%  | /

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. 1.19 10/10/2014

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Huawei RH2288H V3 (Intel Xeon E5-2637 v3)

SPECfp2006 = 106
SPECfp_base2006 = 103

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

Platform Notes (Continued)

Memory:
8x NO DIMM NO DIMM 3 rank
8x Samsung M393A2G40DB0-CPB 16 GB 1 rank 2133 MHz
8x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec15/libs/32:/spec15/libs/64:/spec15/sh"
OMP_NUM_THREADS = "8"

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
runspec 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

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 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64 -nofor_main
447.dealII: -DSPEC_CPU_LP64

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Huawei RH2288H V3 (Intel Xeon E5-2637 v3)

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Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Base Portability Flags (Continued)

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 -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

Peak Compiler 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
Huawei RH2288H V3 (Intel Xeon E5-2637 v3)  

**SPECfp2006** = 106  
**SPECfp_base2006** = 103

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<td>Hardware Availability:</td>
<td>Sep-2014</td>
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<tr>
<td>Tested by:</td>
<td>Huawei</td>
<td>Software Availability:</td>
<td>Sep-2014</td>
</tr>
</tbody>
</table>

**Peak Optimization Flags**

C benchmarks:

433.milc:  -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)  
-o3(pass 2)  -no-prec-div(pass 2)  -prof-use(pass 2)  
-auto-ilp32  -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd:  -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)  
-o3(pass 2)  -no-prec-div(pass 2)  -prof-use(pass 2)  
-fno-alias  -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray:  -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)  
-o3(pass 2)  -no-prec-div(pass 2)  -prof-use(pass 2)  -unroll14  
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess:  -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)  
-o3(pass 2)  -no-prec-div(pass 2)  -prof-use(pass 2)  -unroll12  
-inline-level=0  -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD:  -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)  
-o3(pass 2)  -no-prec-div(pass 2)  -prof-use(pass 2)  -unroll12  
-inline-level=0  -opt-prefetch  -parallel

465.tonto:  -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)  
-o3(pass 2)  -no-prec-div(pass 2)  -prof-use(pass 2)  
-inline-calloc  -opt-malloc-options=3  -auto  -unroll14

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

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Huawei RH2288H V3 (Intel Xeon E5-2637 v3)

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SPECfp_base2006 = 103

CPU2006 license: 3175
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Software Availability: Sep-2014

Peak Optimization Flags (Continued)

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias
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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.html

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/Huawei-Platform-Settings-HASWELL-V1.1.xml

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For other inquiries, please contact webmaster@spec.org.

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