Huawei

Huawei XH620 V3 (Intel Xeon E5-2637 v3)

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td>103</td>
</tr>
</tbody>
</table>

CPU2006 license: 3175  
Test sponsor: Huawei  
Tested by: Huawei  
Test date: May-2015  
Hardware Availability: Sep-2014  
Software Availability: Sep-2014

### SPECfp2006 Result

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECfp2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
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</tr>
<tr>
<td>416.games</td>
<td>77.3</td>
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<tr>
<td>433.milc</td>
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<tr>
<td>434.zeusmp</td>
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<td>435.gromacs</td>
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<td>436.cactusADM</td>
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<tr>
<td>437.leslie3d</td>
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</tr>
<tr>
<td>444.namd</td>
<td>60.7</td>
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<tr>
<td>447.dealII</td>
<td>43.5</td>
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<td>450.soplex</td>
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<td>453.povray</td>
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<tr>
<td>454.calculix</td>
<td>195</td>
</tr>
<tr>
<td>459.GemsFDPage 1 of 2TD</td>
<td>531</td>
</tr>
<tr>
<td>465.tonto</td>
<td>57.1</td>
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<tr>
<td>470.lbm</td>
<td>47.8</td>
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<tr>
<td>481.wrf</td>
<td>96.7</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>88.2</td>
</tr>
</tbody>
</table>

### 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 chip  
- **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:** Yes  
- **File System:** ext4

Continued on next page
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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
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<td>459.GemsFDTD</td>
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<td>482.sphinx3</td>
<td>221</td>
<td>88.2</td>
<td>221</td>
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</tr>
</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 mode
Set Patrol Scrub to Disable
Set Intel HT Technology to Disable
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Wed May  6 11:14:23 2015

This section contains SUT (System Under Test) info as seen by
Continued on next page
Huawei XH620 V3 (Intel Xeon E5-2637 v3) SPECfp2006 = 106
SPECfp_base2006 = 103

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

Test date: May-2015
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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
cautions.)
  - 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: 263580304 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 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 May 6 10:57

SPEC is set to: /spec15

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 433G 66G 346G 16% /

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. 1.36 04/09/2015

Continued on next page
Huawei

Huawei XH620 V3 (Intel Xeon E5-2637 v3)

SPECfp2006 = 106
SPECfp_base2006 = 103

Platform Notes (Continued)

Memory:
8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz
8x Micron 36ASF2G72PZ-2G1A2 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:
ics -m64

C++ benchmarks:
ccpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
ics -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.reussmp: -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

Continued on next page
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SPECfp2006 = 106
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CPU2006 license: 3175
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Base Portability Flags (Continued)

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

Huawei XH620 V3 (Intel Xeon E5-2637 v3)

SPECfp2006 = 106
SPECfp_base2006 = 103

CPU2006 license: 3175
Test sponsor: Huawei
Test date: May-2015
Tested by: Huawei
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(pas2 2) -prof-gen(pas1 2) -ipo(pas2 2)
          -03(pas2 2) -no-prec-div(pas2 2) -prof-use(pas2 2)
          -auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pas2 2) -prof-gen(pas1 2) -ipo(pas2 2)
          -03(pas2 2) -no-prec-div(pas2 2) -prof-use(pas2 2)
          -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pas2 2) -prof-gen(pas1 2) -ipo(pas2 2)
            -03(pas2 2) -no-prec-div(pas2 2) -prof-use(pas2 2) -unroll14
            -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pas2 2) -prof-gen(pas1 2) -ipo(pas2 2)
            -03(pas2 2) -no-prec-div(pas2 2) -prof-use(pas2 2) -unroll12
            -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pas2 2) -prof-gen(pas1 2) -ipo(pas2 2)
              -03(pas2 2) -no-prec-div(pas2 2) -prof-use(pas2 2) -unroll12
              -inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pas2 2) -prof-gen(pas1 2) -ipo(pas2 2)
           -03(pas2 2) -no-prec-div(pas2 2) -prof-use(pas2 2)
           -inline-callloc -opt-malloc-options=3 -auto -unroll14

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

Continued on next page
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```
SPECfp2006 = 106
SPECfp_base2006 = 103
```

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<tr>
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<td>Sep-2014</td>
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</table>

**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/Intel-ic15.0-official-linux64.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/Intel-ic15.0-official-linux64.xml)
- [http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.xml](http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.xml)

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

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