Huawei

Huawei XH620, Intel Xeon X5660

<table>
<thead>
<tr>
<th>SPECfp\textsuperscript{®} results</th>
<th>\textsuperscript{®}rate2006 = NC</th>
<th>\textsuperscript{®}rate\textsubscript{base}2006 = NC</th>
</tr>
</thead>
</table>

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Jan-2011
Hardware Availability: May-2011
Software Availability: Jan-2011

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 customized in a manner that did not meet SPEC's requirements for documented and supported systems.

CPEs

410.bwaves
416.gamess
433.milc
434.zeusmp
435.gromacs
436.cactusADM
437.leslie3d
444.namd
447.dealII
450.soplex
453.povray
454.calculix
459.CCITtof
465.ento
470.lbm
481.wrf
482.sphinx3
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 customized in a manner that did not meet SPEC's requirements for documented and supported systems.

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon X5660</td>
<td>Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default</td>
</tr>
<tr>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz</td>
<td>Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64</td>
</tr>
<tr>
<td>CPU MHz: 2850</td>
<td>Version 12.0.1.116 Build 20101116</td>
</tr>
<tr>
<td>FPU: Integrated</td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td>CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core</td>
<td>File System: ext3</td>
</tr>
<tr>
<td>CPU(s) orderable: 1,2 chip</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Base Pointers: 64-bit</td>
</tr>
<tr>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>L3 Cache: 12 MB I+D on chip per chip</td>
<td>Other Software: None</td>
</tr>
<tr>
<td>Other Cache: None</td>
<td>Other Hardware: None</td>
</tr>
<tr>
<td>Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)</td>
<td>Disk Subsystem: 1 x 300 GB SAS, 15K RPM</td>
</tr>
<tr>
<td>Other Hardware: None</td>
<td></td>
</tr>
</tbody>
</table>
SPEC CFP2006 Result

Huawei
Huawei XH620, Intel Xeon X5660

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

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

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 customized in a manner that did not meet SPEC's requirements for documented and supported systems.

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base Copies</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Copies</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>12</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>416.gamess</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>433.milc</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>444.namd</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>447.dealII</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>450.soplex</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>12</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>453.povray</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>454.calculix</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>459.GemsFD</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>465.tonto</td>
<td>24</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>470.lbm</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>12</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>481.wrf</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>NC</td>
<td>NC</td>
</tr>
</tbody>
</table>

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

Submit Notes

The config file option 'submit' was used. numactl was used to bind copies to the cores.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
"echo 1 > /proc/sys/vm/zone_reclaim_mode"
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
"echo 7200 > /proc/sys/vm/nr_hugepages"

Non-Compliant
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 customized in a manner that did not meet SPEC's requirements for documented and supported systems.

Operating System Notes (Continued)

```bash
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs
```

Platform Notes:

Data Reuse Optimization disabled in BIOS Setup.

General Notes

Binaries compiled on RHEL 5.5

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

- 416.bwaves: -DSPEC_CPU_LP64
- 416.gemm: -DSPEC_CPU_LP64
- 435.milc: -DSPEC_CPU_LP64
- 434.zeusmp: -DSPEC_CPU_LP64 -nofor_main
- 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
- 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
- 437.leslie3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64

Non-compliant
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 customized in a manner that did not meet SPEC's requirements for documented and supported systems.

Base Portability Flags (Continued)

```
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
701.lbmv: -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:**
  -xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

- **C++ benchmarks:**
  -xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

- **Fortran benchmarks:**
  -xSSE4.2 -ipo -O3 -no-prec-div -static

- **Benchmarks using both Fortran and C:**
  -xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

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: icpc -m32

Continued on next page
Huawei
Huawei XH620, Intel Xeon X5660

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

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

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 customized in a manner that did not meet SPEC's requirements for documented and supported systems.

Peak Compiler Invocation (Continued)

Fortran benchmarks:
ifort -m64

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

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP
416.gamess: -DSPEC_CPU_LP
433.milc: -DSPEC_CPU_LP
434.zeusmp: -DSPEC_CPU_LP
435.gromacs: -DSPEC_CPU_LP -nofor_main
436.cactusADM: -DSPEC_CPU_LP -nofor_main
437.leslie3d: -DSPEC_CPU_LP
444.namd: -DSPEC_CPU_LP
447.dealII: -DSPEC_CPU_LP
453.povray: -DSPEC_CPU_LP
454.calculix: -DSPEC_CPU_LP -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP
465.tonto: -DSPEC_CPU_LP
470.lbm: -DSPEC_CPU_LP
481.wrf: -DSPEC_CPU_LP -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:
433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
-ansi-alias -opt-prefetch -static -auto-ilp32
Huawei
Huawei XH620,Intel Xeon X5660

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 customized in a manner that did not meet SPEC's requirements for documented and supported systems.

Peak Optimization Flags (Continued)

482.sphinx3: -xsse4.2 -ipo -03 -no-prec-div -unroll2

C++ benchmarks:

444.namd: -xsse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
  -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xsse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
  -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

453.povray: -xsse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
  -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xsse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -static

453.zgame: basepeak = yes

434.zmp: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xsse4.2(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
  -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:
Huawei

Huawei XH620, Intel Xeon X5660

**SPECfp_rate2006** = NC
**SPECfp_rate_base2006** = NC

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

Test date: Jan-2011
Hardware Availability: May-2011
Software Availability: Jan-2011

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 customized in a manner that did not meet SPEC's requirements for documented and supported systems.

Peak Optimization Flags (Continued)

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass l) -ipo(pass 2) -03(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-refetch
-static -auto-ilp32

436.cactusADM: basepeak = yes
454.calculix: basepeak = yes
481.wrf: basepeak = yes

The flags files used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/HUAWEI-platform-linux64-revC.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.