Huawei
Huawei RH2285, Intel Xeon E5640

<table>
<thead>
<tr>
<th>SPECfp®_rate2006</th>
<th>NC</th>
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<tbody>
<tr>
<td>SPECfp_rate_base2006</td>
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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

SPECfp®_rate2006 = NC
SPECfp_rate_base2006 = NC

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

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<table>
<thead>
<tr>
<th>Copies</th>
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<tbody>
<tr>
<td>410.bwaves</td>
</tr>
<tr>
<td>416.gamess</td>
</tr>
<tr>
<td>433.milc</td>
</tr>
<tr>
<td>434.zeusmp</td>
</tr>
<tr>
<td>435.gromacs</td>
</tr>
<tr>
<td>436.cactusADM</td>
</tr>
<tr>
<td>437.leslie3d</td>
</tr>
<tr>
<td>444.namd</td>
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<tr>
<td>447.dealII</td>
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<td>450.soplex</td>
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<tr>
<td>453.povray</td>
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<td>454.calculix</td>
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<tr>
<td>459.CFD benchmarks</td>
</tr>
<tr>
<td>465.tonto</td>
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<td>470.lbm</td>
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<tr>
<td>481.wrf</td>
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<tr>
<td>482.sphinx3</td>
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### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E5640</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 2.93 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2667</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
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<tr>
<td>CPU(s) enabled:</td>
<td>8 cores, 2 chips, 4 cores/chip, 2 threads/core</td>
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<tr>
<td>CPU(s) orderable:</td>
<td>1, 2 chip</td>
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<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
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<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
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<td>L3 Cache:</td>
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<tr>
<td>Other Cache:</td>
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<tr>
<td>Memory:</td>
<td>48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)</td>
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<tr>
<td>Disk Subsystem:</td>
<td>1 x 300 GB SAS, 15K RPM</td>
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<td>Other Hardware:</td>
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### Software

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default</th>
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</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116</td>
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<tr>
<td>Auto Parallel:</td>
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<td>File System:</td>
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<tr>
<td>System State:</td>
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<td>Base Pointers:</td>
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<td>Peak Pointers:</td>
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<td>Other Software:</td>
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</tbody>
</table>

Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
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Results Table

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</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
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### 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
- 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:  
  -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
SPEC CFP2006 Result

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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_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
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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

Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
-ansi-alias -opt-prefetch -static -auto-ilp32

Continued on next page
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Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(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) -O3(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) -O3(pass 2)
   -no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
   -static-level=0 -scalar-rep= -static

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div
   -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(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

Continued on next page
SPEC CFP2006 Result

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
454.calculix: basepeak = yes
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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/HUAWEI-platform-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-revB.xml