Huawei

Huawei RH2285 V2 (Intel Xeon E5-2450L)

<table>
<thead>
<tr>
<th>SPEC® CFP2006 Result</th>
</tr>
</thead>
</table>

**SPECfp®_rate2006 = 335**

**SPECfp_rate_base2006 = 326**

CPU2006 license: 3175
Test sponsor: Huawei
Test date: Jul-2012
Tested by: Huawei
Hardware Availability: May-2012
Software Availability: Dec-2011

<table>
<thead>
<tr>
<th>Copies</th>
<th>410.bwaves</th>
<th>416.gamess</th>
<th>433.milc</th>
<th>434.zeusmp</th>
<th>435.gromacs</th>
<th>436.cactusADM</th>
<th>437.leslie3d</th>
<th>444.namd</th>
<th>447.dealII</th>
<th>450.soplex</th>
<th>453.povray</th>
<th>454.calculix</th>
<th>459.GemsFDTD</th>
<th>465.tonto</th>
<th>470.lbm</th>
<th>481.wrf</th>
<th>482.sphinx3</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>241</td>
<td>228</td>
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<td>394</td>
<td>466</td>
<td>220</td>
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<td>466</td>
<td>201</td>
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</tbody>
</table>

**Continued on next page**
Huawei RH2285 V2 (Intel Xeon E5-2450L)

SPECfp_rate2006 = 335
SPECfp_rate_base2006 = 326

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
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<tbody>
<tr>
<td>410.bwaves</td>
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<td>1814 240</td>
<td>1907 228</td>
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<td>416.gamess</td>
<td>32</td>
<td>1821 344</td>
<td>1815 345</td>
<td>32 1818 345</td>
<td>1861 337</td>
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<td>433.milc</td>
<td>32</td>
<td>801 1443</td>
<td>282 281</td>
<td>32 801 288</td>
<td>799 286</td>
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<td>434.zeusmp</td>
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<td>820 466</td>
<td>821 466</td>
<td>32 820 466</td>
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<tr>
<td>435.gromacs</td>
<td>32</td>
<td>591 442</td>
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<td>436.cactusADM</td>
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<td>595 443</td>
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<tr>
<td>437.leslie3d</td>
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<td>796 396</td>
<td>800 394</td>
<td>32 796 396</td>
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<tr>
<td>444.namd</td>
<td>32</td>
<td>773 1715</td>
<td>1710 198</td>
<td>16 845 201</td>
<td>845 201</td>
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<tr>
<td>447.dealII</td>
<td>32</td>
<td>1075 409</td>
<td>1074 409</td>
<td>32 1075 409</td>
<td>1074 409</td>
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<tr>
<td>450.soplex</td>
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<td>1002 269</td>
<td>1003 269</td>
<td>32 1002 269</td>
<td>1003 269</td>
</tr>
<tr>
<td>454.calculix</td>
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<td>2317 424</td>
<td>2317 424</td>
<td>32 2317 424</td>
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<td>1074 409</td>
<td>32 1075 409</td>
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<td>465.tonto</td>
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<td>1002 357</td>
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<td>481.wrf</td>
<td>32</td>
<td>2317 269</td>
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<td>32 2317 269</td>
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<tr>
<td>482.sphinx3</td>
<td>32</td>
<td>1821 344</td>
<td>1815 345</td>
<td>32 1821 345</td>
<td>1861 337</td>
</tr>
</tbody>
</table>

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
Select only test related files when installing the operating system
## SPEC CFP2006 Result

### Huawei RH2285 V2 (Intel Xeon E5-2450L)

<table>
<thead>
<tr>
<th>SPECfp_rate2006</th>
<th>335</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_rate_base2006</td>
<td>326</td>
</tr>
</tbody>
</table>

- **CPU2006 license:** 3175
- **Test sponsor:** Huawei
- **Tested by:** Huawei
- **Test date:** Jul-2012
- **Hardware Availability:** May-2012
- **Software Availability:** Dec-2011

### Platform Notes

**BIOS configuration:**
Set Power Efficiency Mode to Performance

**Baseboard Management Controller**
used to adjust the fan speed to 100%

**Sysinfo program**
/spec/config/sysinfo.rev6800

$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3

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 E5-2450L 0 @ 1.80GHz
- 2 "physical id"s (chips)
- 32 "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 : 8
  - siblings : 16
  - physical 0: cores 0 1 2 3 4 5 6 7
  - physical 1: cores 0 1 2 3 4 5 6 7
- cache size : 20480 KB

**From /proc/meminfo**

- MemTotal: 99030424 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

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

- redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
- system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)

**uname -a:**

- Linux DH310-2 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011 x86_64
- x86_64 x86_64 GNU/Linux

**run-level**

- 3 Jul 10 18:20

**SPEC is set to:** /spec

**Filesystem**

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sdal</td>
<td>ext4</td>
<td>289G</td>
<td>103G</td>
<td>171G</td>
<td>38%</td>
<td>/</td>
</tr>
</tbody>
</table>

**Additional information from dmidecode:**

(End of data from sysinfo program)
**SPEC CFP2006 Result**

**Huawei**

**CPU2006 license:** 3175  
**Test date:** Jul-2012  
**Test sponsor:** Huawei  
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**SPECfp_rate2006 =** 335  
**SPECfp_rate_base2006 =** 326

---

**General Notes**

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"

Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1

The Huawei RH2285 v2 and Huawei RH2285H v2 models are electronically equivalent. The results have been measured on a Huawei RH2285 v2 model.

---

**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
- 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
Huawei
Huawei RH2285 V2 (Intel Xeon E5-2450L)

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CPU2006 license: 3175
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Tested by: Huawei

Test date: Jul-2012
Hardware Availability: May-2012
Software Availability: Dec-2011

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

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

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
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
453.povray: -DSPEC_CPU_LP64
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SPECfp_rate2006 = 335
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Tested by: Huawei

Test date: Jul-2012
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Software Availability: Dec-2011

Peak Portability Flags (Continued)

454.calculix: -DSPEC_CPU_LP64 -nofor_main
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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
            -opt-mem-layout-trans=3

470.lbm: basepeak = yes

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

C++ benchmarks:

444.namd: -xAVX(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: -xAVX(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

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
            -opt-mem-layout-trans=3

Fortran benchmarks:

410.bwaves: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -static

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

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(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

Continued on next page
Huawei RH2285 V2 (Intel Xeon E5-2450L)

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SPECfp_rate2006 = 335
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Peak Optimization Flags (Continued)

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ipo2 -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo -O3 -no-prec-div
-ipo2 -prof-use(pass 2) -sSSE4.2 -opt-prefetch -static
-auto-ilp32 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-mem-layout-trans=3

481.wrf: Same as 454.calculix

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.20120703.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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