Huawei

Huawei RH2285H V2 (Intel Xeon E5-2450L)

SPECfp®2006 = 62.1
SPECfp_base2006 = 59.2

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

CPU Name: Intel Xeon E5-2450L
CPU Characteristics: Intel Turbo Boost Technology up to 2.30 GHz
CPU MHz: 1800
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
CPU(s) orderable: 1.2 chips
Primary Cache: 32 KB I+32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: ext4

Hardware

Software
Huawei RH2285H V2 (Intel Xeon E5-2450L)

**SPECfp2006 = 62.1**

**SPECfp_base2006 = 59.2**

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**Huawei**

CPU2006 license: 3175

Test sponsor: Huawei

Test date: Jul-2012

Tested by: Huawei

Hardware Availability: May-2012

Software Availability: Dec-2011

L3 Cache: 20 MB I+D on chip per chip

Other Cache: None

Memory: 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC)

Disk Subsystem: 1 x 300 GB SAS, 10K RPM

Other Hardware: None

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

Peak Pointers: 32/64-bit

Other Software: None

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### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
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<td>411</td>
<td>47.4</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"

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Select only test related files when installing the operating system

---

### Platform Notes

BIOS configuration:

Intel Hyper-Threading set to Disabled

Set Power Efficiency Mode to Performance

Sysinfo program /spec/config/sysinfo.rev6800

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

running on DH310-2 Wed Jul 18 17:44:56 2012

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Continued on next page
Huawei
Huawei RH2285H V2 (Intel Xeon E5-2450L)

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SPECfp_base2006 = 59.2

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

Platform Notes (Continued)

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)
16 "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 : 8
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 17 03:22

SPEC is set to: /spec

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 289G 103G 171G 38% /

Additional information from dmidecode:

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
OMP_NUM_THREADS = "16"

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

Continued on next page
Huawei

Huawei RH2285H V2 (Intel Xeon E5-2450L)

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General Notes (Continued)
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 -nofor_main
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:
   -xAVX  -ipo  -03  -no-prec-div  -static  -parallel  -opt-prefetch  -ansi-alias

C++ benchmarks:
   -xAVX  -ipo  -03  -no-prec-div  -static  -opt-prefetch  -ansi-alias
Huawei

Huawei RH2285H V2 (Intel Xeon E5-2450L)

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CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jul-2012

Hardware Availability: May-2012

Software Availability: Dec-2011

### Base Optimization Flags (Continued)

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

Benchmarks using both Fortran and C:
- `-xAVX -ipo -O3 -no-prec-div -static -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

### 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`
- `ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3:
- `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

**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`

Continued on next page
Huawei

Huawei RH2285H V2 (Intel Xeon E5-2450L)

| SPECfp2006 = 62.1 |
| SPECfp_base2006 = 59.2 |

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

CPU2006 license: 3175
Test date: Jul-2012
Hardware Availability: May-2012
Software Availability: Dec-2011

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ino-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ino-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ino-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -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-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 other inquiries, please contact webmaster@spec.org.

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