**Huawei BH620 V2 (Intel Xeon E5-2450L)**

**SPECfp®2006** = 62.4  
**SPECfp_base2006** = 59.5

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

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**SPECfp2006 =** 62.4  
**SPECfp_base2006 =** 59.5

### Hardware

- **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

### Software

- **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
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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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Ratio Base</th>
<th>Seconds Base</th>
<th>Ratio Base</th>
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<th>Seconds Peak</th>
<th>Ratio Peak</th>
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<td>444.namd</td>
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<td>453.povray</td>
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<td>459.GemsFDTD</td>
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<tr>
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<td>401/48.6</td>
<td>404/48.3</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 07:47:33 2012

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Huawei BH620 V2 (Intel Xeon E5-2450L)

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**Test sponsor:** Huawei

**Test date:** Jul-2012

**Hardware Availability:** May-2012

**Tested by:** Huawei

**Software Availability:** Dec-2011

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**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
Huawei BH620 V2 (Intel Xeon E5-2450L)

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

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
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 -O3 -no-prec-div -static -parallel -opt-prefetch
  -ansi-alias

C++ benchmarks:
  -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

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
Huawei
Huawei BH620 V2 (Intel Xeon E5-2450L)

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SPECfp_base2006 = 59.5

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

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

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

   447.dealII: basepeak = yes

   450.soplex: basepeak = yes

   453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-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

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SPEC CFP2006 Result

Huawei

Huawei BH620 V2 (Intel Xeon E5-2450L)  

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| SPECfp_base2006 | 59.5 |

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

Peak Optimization Flags (Continued)

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: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-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 questions about this result, please contact the tester.

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

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