Huawei BH620 V2 (Intel Xeon E5-2470)

**SPECfp**\_rate\_base2006 = 401

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

**Hardware**

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**SPECfp**\_rate2006 = 414

**SPECfp\_rate\_base2006 = 401**
Huawei BH620 V2 (Intel Xeon E5-2470)  

**SPECfp_rate2006 = 414**  
**SPECfp_rate_base2006 = 401**

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

### Test sponsor: Huawei  
**Tested by:** Huawei

### L3 Cache:  
20 MB I+D on chip per chip  
**System State:** Run level 3 (multi-user)

### Other Cache:  
None  
**Base Pointers:** 32/64-bit

### Memory:  
96 GB (12 x 8 GB 1Rx4 PC3-12800R-11, ECC)  
**Peak Pointers:** 32/64-bit

### Disk Subsystem:  
1 x 300 GB SAS, 10K RPM  
**Other Software:** None

### Other Hardware:  
None  
**Other Hardware:** None

---

### Results Table

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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  
runcspec command invoked through numactl i.e.:  
umactl --interleave=all runspec <etc>  
Select only test related files when installing the operating system.
## 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
running on RH62-yjp2 Thu Jun 14 15:04:29 2012

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 E5-2470 0 @ 2.30GHz
  - 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: 99041220 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 RH62-yjp2 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 Jun 13 23:36*

**SPEC is set to:** /spec
**Filesystem**    **Type**    **Size**  **Used**  **Avail**  **Use%**  **Mounted on**
/dev/sda1      ext3      270G      59G     198G     23%    /

*Additional information from dmidecode:*
**Memory:**
  - 12x Samsu M393B 8 GB 1600 MHz 1 rank

*(End of data from sysinfo program)*
Huawei BH620 V2 (Intel Xeon E5-2470)

**SPECfp_rate2006 = 414**

**SPECfp_rate_base2006 = 401**

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

**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

**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

**Base Optimization Flags**

C benchmarks:
- -xAVX  -ipo  -03  -no-prec-div  -static  -opt-prefetch  -auto-p32
  -ansi-alias  -opt-mem-layout-trans=3

Continued on next page
SPEC CFP2006 Result

Huawei BH620 V2 (Intel Xeon E5-2470)

SPECfp_rate2006 = 414
SPECfp_rate_base2006 = 401

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

Base Optimization Flags (Continued)

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
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
Huawei

Huawei BH620 V2 (Intel Xeon E5-2470)

SPECfp_rate2006 = 414
SPECfp_rate_base2006 = 401

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

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

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(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 -03 -no-prec-div -opt-prefetch -static
    -unroll12

C++ benchmarks:

444.namd: -xAVX(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: -xAVX(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

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(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) -03(pass 2)
    -no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
    -no-prec-div(pass 2) -prof-use(pass 2) -unroll12
    -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -03 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(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

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
    -no-prec-div(pass 2) -prof-use(pass 2) -unroll14 -auto
    -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo -03 -no-prec-div
    -prof-use(pass 2) -xSSE4.2 -opt-prefetch -static
    -auto-ilp32 -opt-mem-layout-trans=3

Continued on next page
## Huawei

**Huawei BH620 V2 (Intel Xeon E5-2470)**

| SPECfp_rate2006 = | 414 |
| SPECfp_rate_base2006 = | 401 |

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

### Peak Optimization Flags (Continued)

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:


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/Intel-ic12.1-official-linux64.20120425.xml)