SPEC® CFP2006 Result
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Huawei

Huawei RH2285H V2 (Intel Xeon E5-2440)

$SPECfp^{®}2006 =$ 71.0

$SPECfp\_base2006 =$ 68.8

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

Test date: Jun-2013
Hardware Availability: Jun-2013
Software Availability: Feb-2013

Benchmark	Result
410.bwaves	243 / 242
416.gamess	30.4 / 26.5
433.milc	55.5 / 55.3
434.zeusmp	124
435.gromacs	35.2
436.cactusADM	372
437.leslie3d	126
444.namd	20.1 / 19.8
447.dealII	47.8
450.soplex	34.5
453.povray	44.2 / 37.2
454.calculix	34.4 / 33.8
459.GemsFDTD	135 / 129
465.tonto	36.9 / 32.4
470.lbm	325
481.wrf	66.7
482.sphinx3	64.4

SPECfp_base2006 = 68.8
SPECfp2006 = 71.0

Hardware

CPU Name:	Intel Xeon E5-2440
CPU Characteristics:	Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.el6.x86_64
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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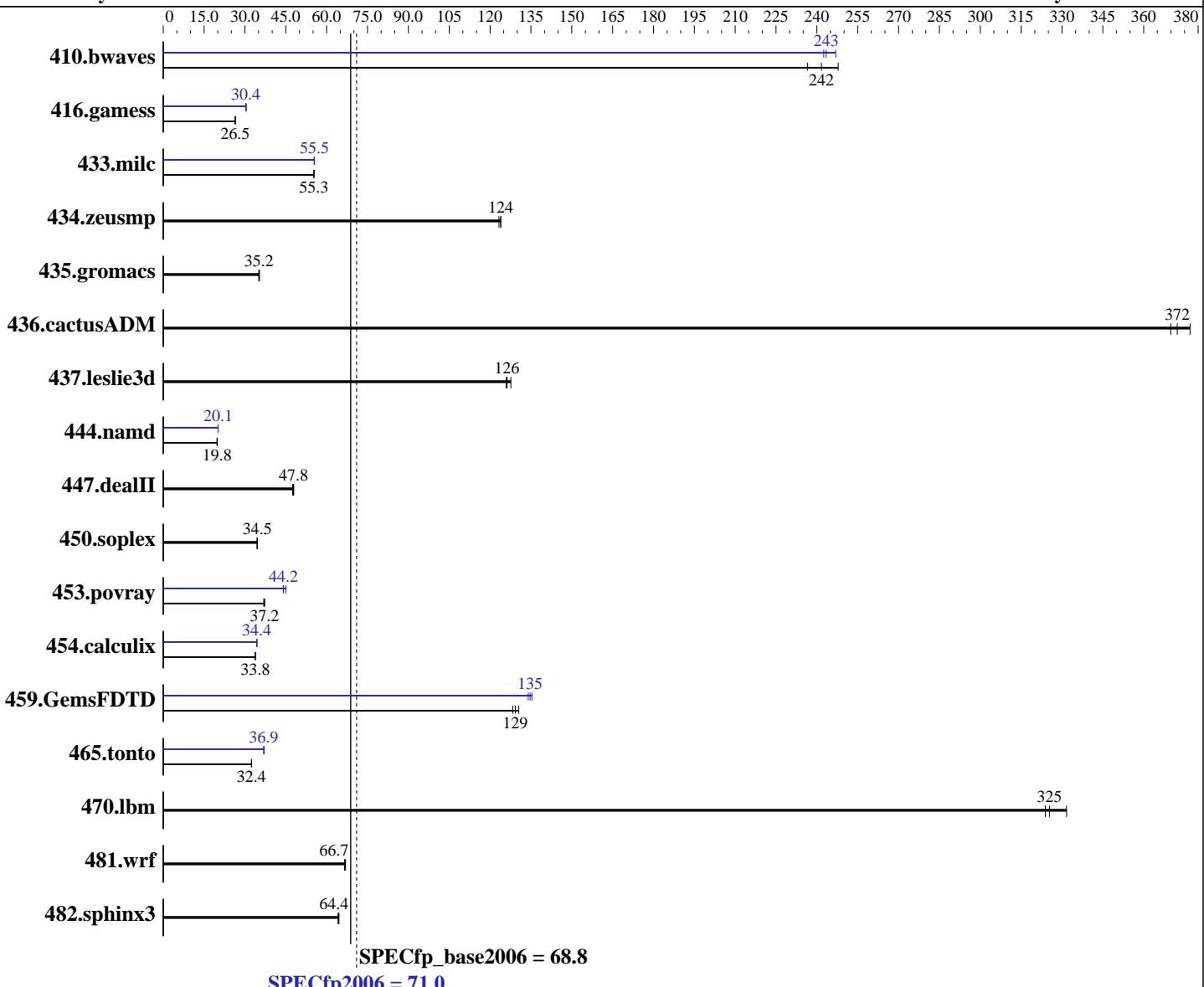|	
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L3 Cache:	15 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 300 GB SAS, 10K RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	54.8	248	57.4	237	**56.2**	**242**	**55.8**	**243**	55.0	247	56.0	243
416.gamess	738	26.5	743	26.4	**740**	**26.5**	645	30.4	**645**	**30.4**	644	30.4
433.milc	**166**	**55.3**	166	55.3	166	55.3	**165**	**55.5**	165	55.5	166	55.4
434.zeusmp	**73.4**	**124**	73.8	123	73.4	124	**73.4**	**124**	73.8	123	73.4	124
435.gromacs	202	35.3	204	35.1	**203**	**35.2**	202	35.3	204	35.1	**203**	**35.2**
436.cactusADM	**32.1**	**372**	31.7	377	32.3	370	**32.1**	**372**	31.7	377	32.3	370
437.leslie3d	**74.5**	**126**	74.6	126	73.6	128	**74.5**	**126**	74.6	126	73.6	128
444.namd	405	19.8	**405**	**19.8**	405	19.8	398	20.1	**398**	**20.1**	398	20.1
447.dealII	239	47.9	**239**	**47.8**	241	47.5	239	47.9	**239**	**47.8**	241	47.5
450.soplex	**242**	**34.5**	242	34.5	242	34.5	**242**	**34.5**	242	34.5	242	34.5
453.povray	144	36.9	**143**	**37.2**	143	37.2	118	45.0	121	44.1	**120**	**44.2**
454.calculix	244	33.8	244	33.8	**244**	**33.8**	240	34.3	**240**	**34.4**	240	34.4
459.GemsFDTD	81.3	131	82.7	128	**82.1**	**129**	**78.8**	**135**	78.4	135	79.2	134
465.tonto	303	32.4	304	32.4	**304**	**32.4**	265	37.1	**267**	**36.9**	267	36.9
470.lbm	42.4	324	41.4	332	**42.2**	**325**	42.4	324	41.4	332	**42.2**	**325**
481.wrf	168	66.6	167	66.9	**168**	**66.7**	168	66.6	167	66.9	**168**	**66.7**
482.sphinx3	**303**	**64.4**	304	64.2	302	64.5	**303**	**64.4**	304	64.2	302	64.5

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"

Platform Notes

    Sysinfo program /spec/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on speccpu Tue Jun 11 21:42:05 2013

    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 E5-2440 0 @ 2.40GHz

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Platform Notes (Continued)

```
     2 "physical id"s (chips)
    12 "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 : 6
     siblings  : 6
     physical 0: cores 0 1 2 3 4 5
     physical 1: cores 0 1 2 3 4 5
  cache size : 15360 KB

From /proc/meminfo
   MemTotal:        99024240 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux speccpu 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 11 14:00

SPEC is set to: /spec
   Filesystem     Type      Size  Used Avail Use% Mounted on
   /dev/mapper/ddf1_4c53492020202020201000005b19e5d20447114711f8bdfdbdp1
                  ext4      241G   71G  158G  31% /

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 = "12"

 Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory
 using RHEL 6.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

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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 -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
```

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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: `basepeak = yes`

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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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
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.20121120.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.20121120.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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