SPEC® CFP2006 Result

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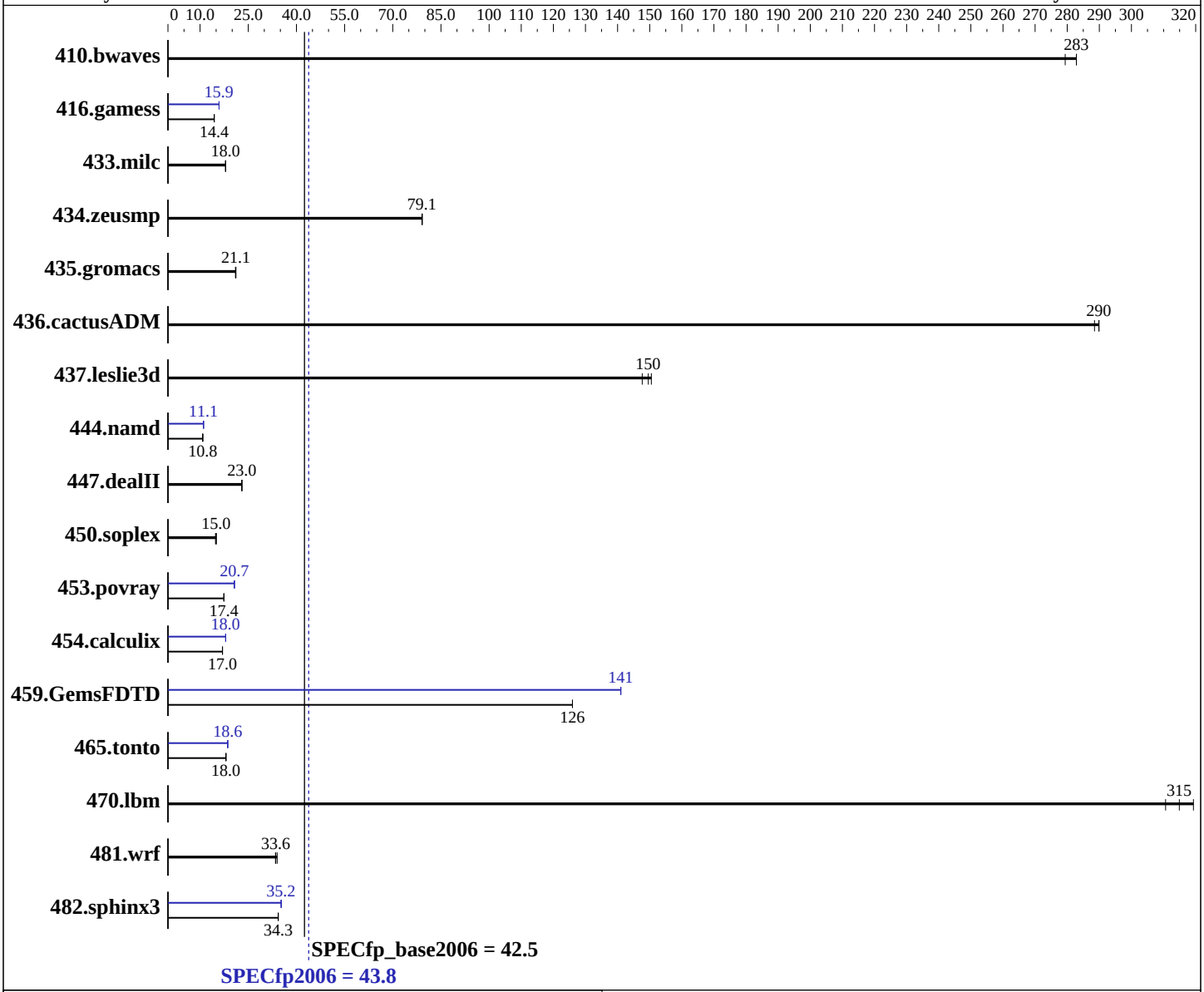
Huawei
Tecal RH5885 V2

SPECfp®2006 = 43.8

SPECfp_base2006 = 42.5

CPU2006 license: 13
Test sponsor: Huawei
Tested by: Huawei

Test date: Oct-2012
Hardware Availability: Oct-2012
Software Availability: Oct-2012



Hardware

CPU Name:	Intel Xeon E7-4807
CPU Characteristics:	
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 13.0.0.079 of Intel C++ Studio XE for Linux; Fortran: Version 13.0.0.079 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache: 18 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (64 x 8 GB 2Rx4 PC3-10600R-9, ECC, running at 800 MHz)
Disk Subsystem: 100 GB SSD
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	48.6	279	**48.0**	**283**	48.0	283	48.6	279	**48.0**	**283**	48.0	283
416.gamess	1361	14.4	**1360**	**14.4**	1358	14.4	1230	15.9	1231	15.9	**1230**	**15.9**
433.milc	512	17.9	**511**	**18.0**	511	18.0	512	17.9	**511**	**18.0**	511	18.0
434.zeusmp	115	79.2	**115**	**79.1**	115	79.1	115	79.2	**115**	**79.1**	115	79.1
435.gromacs	340	21.0	337	21.2	**338**	**21.1**	340	21.0	337	21.2	**338**	**21.1**
436.cactusADM	**41.2**	**290**	41.4	288	41.2	290	**41.2**	**290**	41.4	288	41.2	290
437.leslie3d	62.5	151	**62.9**	**150**	63.7	148	62.5	151	**62.9**	**150**	63.7	148
444.namd	**740**	**10.8**	741	10.8	740	10.8	724	11.1	**724**	**11.1**	724	11.1
447.dealII	**497**	**23.0**	497	23.0	497	23.0	**497**	**23.0**	497	23.0	497	23.0
450.soplex	553	15.1	**557**	**15.0**	563	14.8	553	15.1	**557**	**15.0**	563	14.8
453.povray	305	17.5	**305**	**17.4**	306	17.4	**257**	**20.7**	257	20.7	258	20.6
454.calculix	485	17.0	**486**	**17.0**	487	17.0	459	18.0	**459**	**18.0**	459	18.0
459.GemsFDTD	84.2	126	84.2	126	**84.2**	**126**	75.2	141	75.2	141	**75.2**	**141**
465.tonto	**545**	**18.0**	544	18.1	546	18.0	530	18.6	528	18.6	**529**	**18.6**
470.lbm	**43.6**	**315**	44.2	311	43.0	319	**43.6**	**315**	44.2	311	43.0	319
481.wrf	329	34.0	**333**	**33.6**	334	33.5	329	34.0	**333**	**33.6**	334	33.5
482.sphinx3	567	34.4	**568**	**34.3**	568	34.3	552	35.3	553	35.2	**553**	**35.2**

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

```
BIOS configuration:
Intel Hyper-Threading set to Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on Huawei-RH5885 Wed Oct 10 01:08:55 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
```

Continued on next page

Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E7-4807 @ 1.87GHz
      4 "physical id"s (chips)
      24 "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 18 24 25
      physical 1: cores 0 1 2 18 24 25
      physical 2: cores 2 8 9 16 17 18
      physical 3: cores 0 1 2 18 24 25
   cache size : 18432 KB

From /proc/meminfo
   MemTotal:       529115232 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.2 (Santiago)

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)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux Huawei-RH5885 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 Oct 9 09:02

SPEC is set to: /home/cpu2006
   Filesystem     Type    Size  Used Avail Use% Mounted on
   /dev/mapper/vg_huaweirh5885-lv_home
                  ext4     80G   19G   57G  25% /home

Additional information from dmidecode:
  Memory:
   32x Samsung M393B1K70CH0-CH9 8 GB 800 MHz 2 rank
   32x Samsung M393B1K70DH0-YH9 8 GB 800 MHz 2 rank

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
OMP_NUM_THREADS = "24"

 Binaries compiled on a system with 4xE7-4807 CPU + 512 GB
 memory using RHEL6.2
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

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:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -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: `basepeak = yes`

470.lbm: `basepeak = yes`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xSSE4.2(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: -xSSE4.2(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: basepeak = yes

416.gamess: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

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