SPEC® CFP2006 Result
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ZTE

$SPECfp^{®}2006 =$ 78.8

I8300 G2 (Intel Xeon E5-2650, 2.00 GHz)

$SPECfp\_base2006 =$ 75.4

CPU2006 license:	3834	**Test date:**	Dec-2013
Test sponsor:	ZTE	**Hardware Availability:**	Jun-2013
Tested by:	ZTE	**Software Availability:**	Oct-2013

SPECfp_base2006 = 75.4

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410.bwaves	359
416.gamess	29.3 / 24.7
433.milc	54.6 / 53.9
434.zeusmp	135
435.gromacs	33.2
436.cactusADM	431
437.leslie3d	215
444.namd	19.4 / 19.0
447.dealII	43.6
450.soplex	35.1
453.povray	44.2 / 36.3
454.calculix	40.2 / 37.3
459.GemsFDTD	172 / 162
465.tonto	35.8 / 28.1
470.lbm	480
481.wrf	80.8
482.sphinx3	58.4 / 59.4
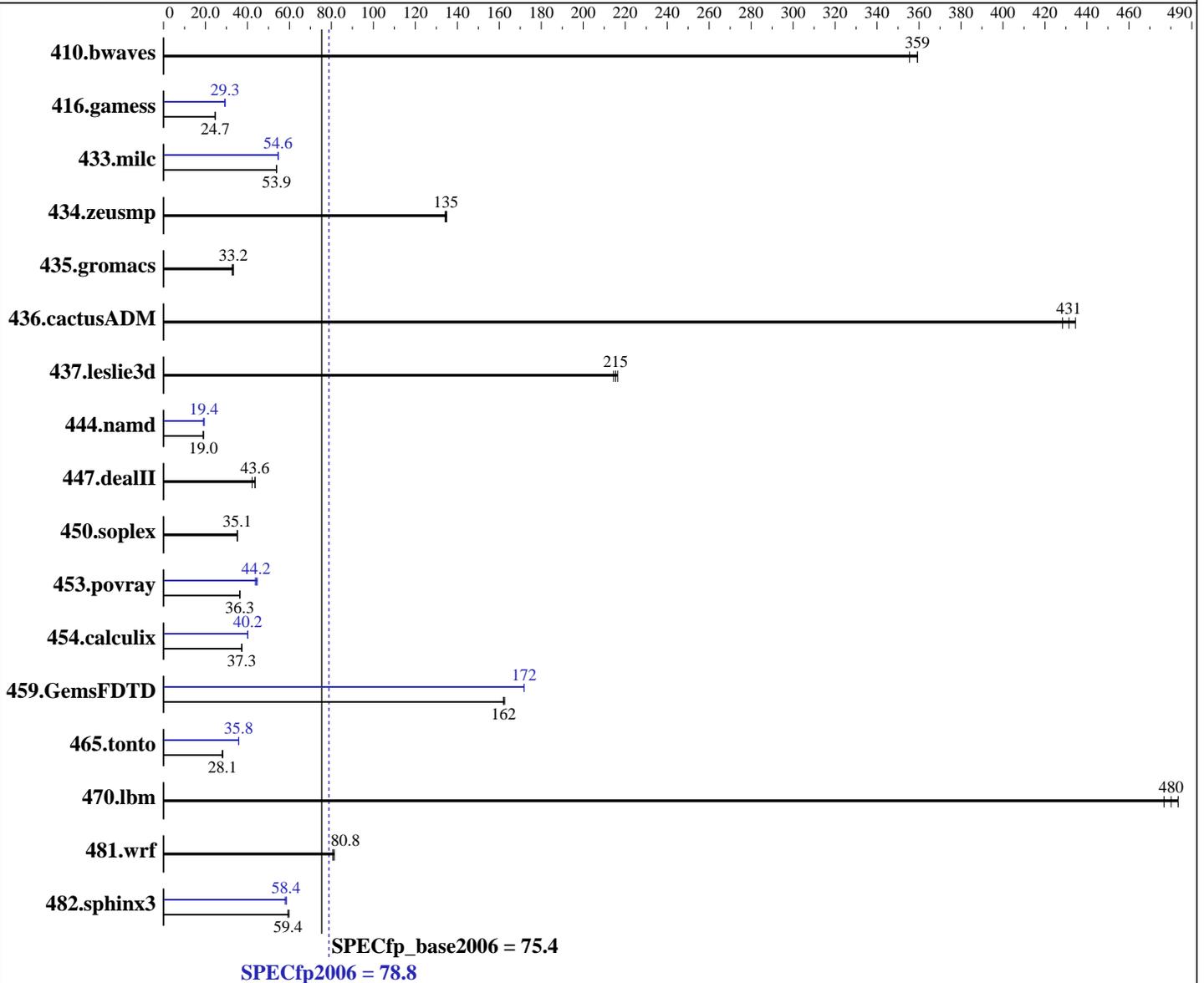
Hardware

CPU Name:	Intel Xeon E5-2650
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chip
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 6.2 (Santiago) Kernel 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux; Fortran: Version 14.0.0.080 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	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	128 GB (8 x 16 GB 2Rx4 PC3L-12800R-11, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	2 x 300 GB, 10000 RPM SAS,RAID1	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	38.2	355	37.8	359	**37.8**	**359**	38.2	355	37.8	359	**37.8**	**359**
416.gamess	**794**	**24.7**	795	24.6	793	24.7	668	29.3	**669**	**29.3**	669	29.3
433.milc	171	53.7	170	53.9	**170**	**53.9**	**168**	**54.6**	168	54.6	168	54.6
434.zeusmp	**67.6**	**135**	67.4	135	67.8	134	**67.6**	**135**	67.4	135	67.8	134
435.gromacs	**215**	**33.2**	219	32.7	215	33.3	**215**	**33.2**	219	32.7	215	33.3
436.cactusADM	27.5	435	**27.7**	**431**	27.9	428	27.5	435	**27.7**	**431**	27.9	428
437.leslie3d	**43.6**	**215**	43.4	216	43.8	214	**43.6**	**215**	43.4	216	43.8	214
444.namd	**422**	**19.0**	422	19.0	422	19.0	422	19.0	414	19.4	**414**	**19.4**
447.dealII	**262**	**43.6**	271	42.2	262	43.6	**262**	**43.6**	271	42.2	262	43.6
450.soplex	**238**	**35.1**	236	35.3	238	35.0	**238**	**35.1**	236	35.3	238	35.0
453.povray	146	36.5	**146**	**36.3**	147	36.3	122	43.7	**120**	**44.2**	119	44.7
454.calculix	**221**	**37.3**	221	37.3	221	37.3	**205**	**40.2**	205	40.2	206	40.1
459.GemsFDTD	65.3	163	**65.5**	**162**	65.5	162	61.7	172	61.7	172	**61.7**	**172**
465.tonto	349	28.2	**350**	**28.1**	352	28.0	**275**	**35.8**	275	35.8	274	35.9
470.lbm	**28.6**	**480**	28.8	477	28.4	483	**28.6**	**480**	28.8	477	28.4	483
481.wrf	**138**	**80.8**	137	81.4	138	80.7	**138**	**80.8**	137	81.4	138	80.7
482.sphinx3	**328**	**59.4**	326	59.8	329	59.3	333	58.6	337	57.9	**334**	**58.4**

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

    HT Enabled,C6 Enabled,Performance Mode,DCU
    Disabled
     Sysinfo program /home/cpu2006-14.0/config/sysinfo.rev6818
     $Rev: 6818 $ $Date:: 2012-07-17 #$ 7195f14be9f4254ad3e2727f78b45679
     running on SPECCPU Sat Dec 14 00:15:33 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

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Test date: Dec-2013
Hardware Availability: Jun-2013
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Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E5-2650 0 @ 2.00GHz
      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:      132135332 kB
   HugePages_Total:    2048
   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 SPECCPU 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 Dec 12 22:49

SPEC is set to: /home/cpu2006-14.0
   Filesystem     Type    Size  Used Avail Use% Mounted on
   /dev/sda3      ext4    273G   48G  212G  19% /

Additional information from dmidecode:
  Memory:
   8x   16 GB
   2x Dimm1_Manufacturer Dimm1_PartNum
   2x Dimm3_Manufacturer Dimm3_PartNum
   2x Dimm5_Manufacturer Dimm5_PartNum
   2x Dimm7_Manufacturer Dimm7_PartNum
   8x Micron 36KSF2G72PZ-1 16 GB 1600 MHz 1 rank

(End of data from sysinfo program)
```

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General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2006-14.0/libs/32:/home/cpu2006-14.0/libs/64:/home/cpu2006-14.0/sh"
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 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
```

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Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias
```

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

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

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -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) -auto-ilp32`
`-ansi-alias`

470.lbm: `basepeak = yes`

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

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Peak Optimization Flags (Continued)

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: basepeak = yes

    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-`

    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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/ZTE-I8300-Settings-V1.2-revA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/ZTE-I8300-Settings-V1.2-revA.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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