SPEC® CFP2006 Result

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Fujitsu

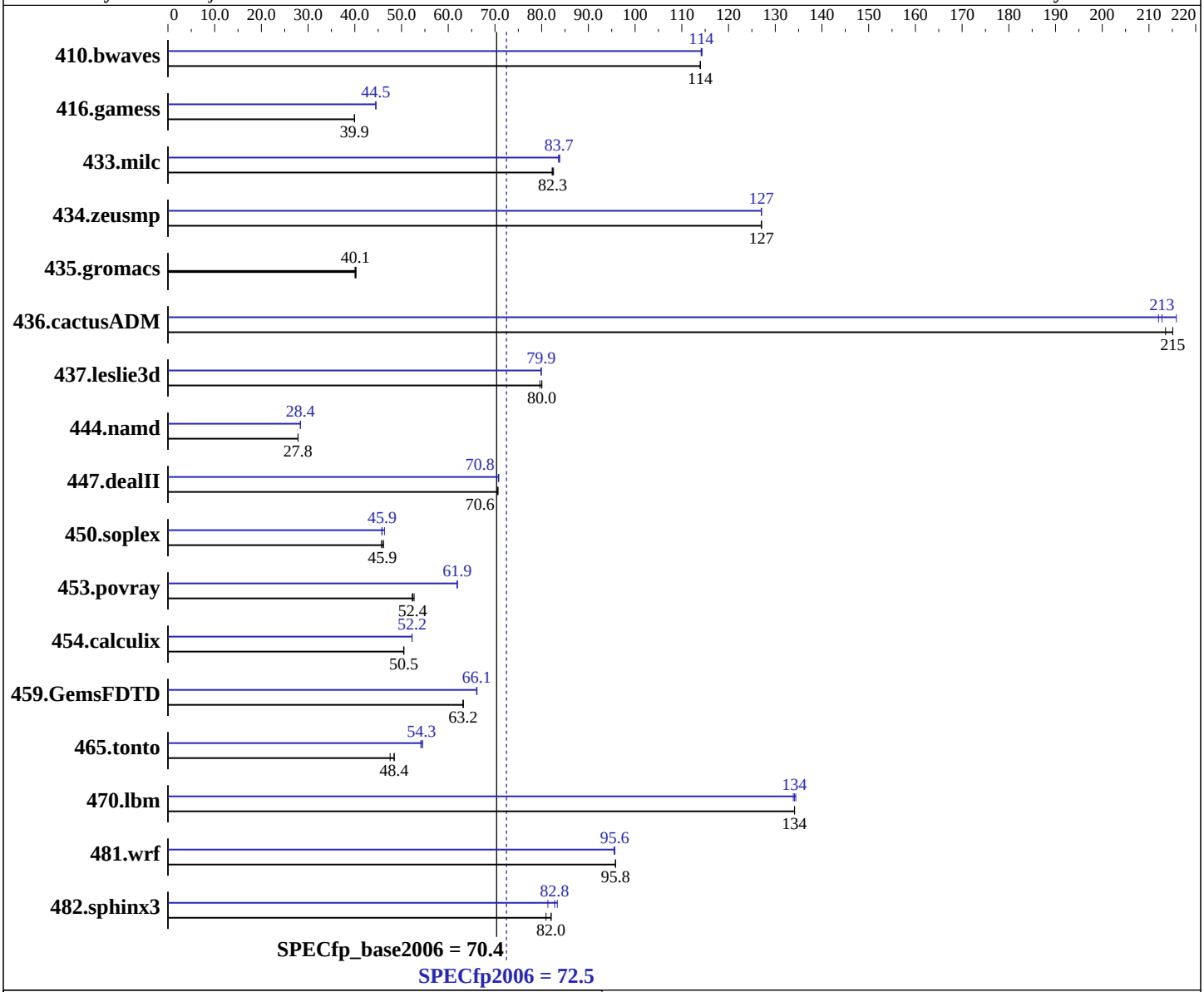
CELSIUS C620 (Intel Xeon E3-1280 v2)

SPECfp®2006 = 72.5

SPECfp_base2006 = 70.4

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

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



Hardware

CPU Name:	Intel Xeon E3-1280 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 4.00 GHz
CPU MHz:	3600
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
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, 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.3.293 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi - user)

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-12800U-11, non-ECC)
Disk Subsystem: 1 x SATA III, 500 GB, 7200 rpm
Other Hardware: None

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	119	114	**119**	**114**	119	114	119	114	**119**	**114**	119	114
416.gamess	490	40.0	**490**	**39.9**	491	39.9	440	44.5	440	44.5	**440**	**44.5**
433.milc	111	82.5	112	82.2	**111**	**82.3**	110	83.6	109	83.9	**110**	**83.7**
434.zeusmp	71.6	127	**71.6**	**127**	71.6	127	71.6	127	**71.6**	**127**	71.6	127
435.gromacs	**178**	**40.1**	178	40.0	177	40.3	**178**	**40.1**	178	40.0	177	40.3
436.cactusADM	56.0	214	**55.6**	**215**	55.6	215	**56.2**	**213**	56.4	212	55.4	216
437.leslie3d	**117**	**80.0**	117	80.0	118	79.6	118	79.9	**118**	**79.9**	118	79.9
444.namd	**288**	**27.8**	288	27.9	288	27.8	**283**	**28.4**	283	28.4	283	28.4
447.dealII	162	70.6	162	70.6	**162**	**70.6**	162	70.7	**162**	**70.8**	162	70.8
450.soplex	**182**	**45.9**	181	46.2	182	45.7	180	46.4	182	45.8	**182**	**45.9**
453.povray	101	52.7	102	52.3	**102**	**52.4**	**85.9**	**61.9**	85.9	61.9	85.9	61.9
454.calculix	164	50.4	163	50.5	**163**	**50.5**	158	52.3	**158**	**52.2**	158	52.2
459.GemsFDTD	**168**	**63.2**	168	63.2	168	63.1	160	66.2	161	66.1	**161**	**66.1**
465.tonto	203	48.4	207	47.6	**203**	**48.4**	181	54.5	**181**	**54.3**	182	54.1
470.lbm	**102**	**134**	102	134	102	134	103	134	**102**	**134**	102	134
481.wrf	**117**	**95.8**	117	95.8	117	95.8	**117**	**95.6**	117	95.5	117	95.6
482.sphinx3	**238**	**82.0**	241	80.9	238	82.0	234	83.4	**235**	**82.8**	240	81.3

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

```
Hyper-Threading Technology = Disabled
Sysinfo program /work/cpu2006/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ 8787f7622badcf24e01c368b1db4377c
running on rhiannon Tue Aug  7 21:44:32 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
```

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Platform Notes (Continued)

```
      model name : Intel(R) Xeon(R) CPU E3-1280 V2 @ 3.60GHz
         1 "physical id"s (chips)
         4 "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 : 4
         siblings  : 4
         physical 0: cores 0 1 2 3
      cache size : 8192 KB

   From /proc/meminfo
      MemTotal:        7988740 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 rhiannon 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 Aug 7 16:35

   SPEC is set to: /work/cpu2006
      Filesystem     Type    Size  Used Avail Use% Mounted on
      /dev/sda2      ext4    193G   66G  118G  36% /work

   (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,compact"
 LD_LIBRARY_PATH = "/work/cpu2006/libs/32:/work/cpu2006/libs/64"
 OMP_NUM_THREADS = "4"

   Binaries were compiled on a system with
   2 x E5-2650 CPU + 96 GB memory using RHEL 6.2.

  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
```

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

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: -xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch -ansi-alias

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

450.soplex: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

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

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Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel -static

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: -xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

437.leslie3d: Same as 434.zeusmp

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: -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: -xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch -ansi-alias

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: Same as 436.cactusADM

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120829.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120829.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.xml

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