SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

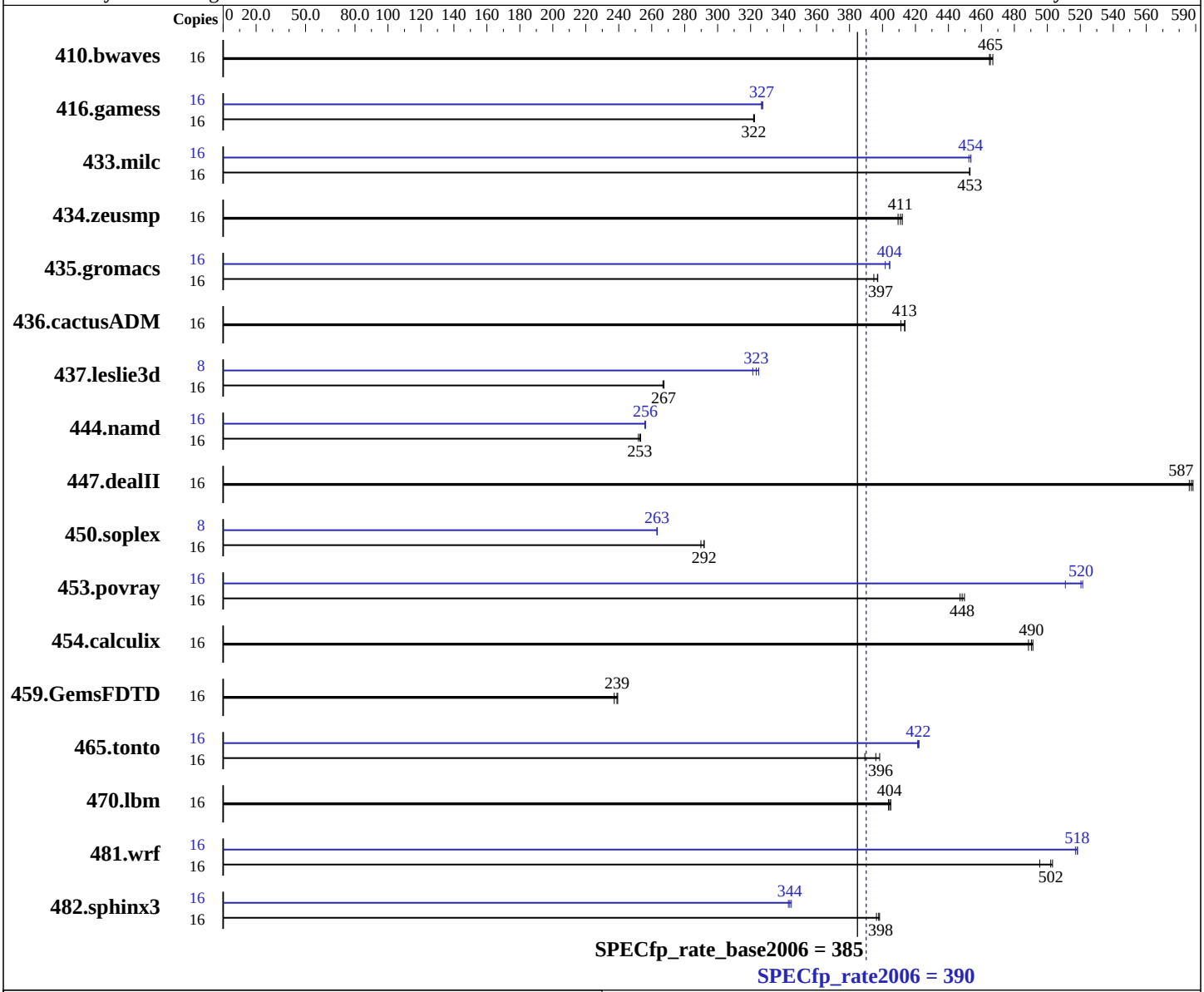
I620-G10 (Intel Xeon E5-2637 v2, 3.50 GHz)

SPECfp®_rate2006 = 390

SPECfp_rate_base2006 = 385

CPU2006 license: 9046
Test sponsor: Sugon
Tested by: Sugon

Test date: Nov-2013
Hardware Availability: Nov-2013
Software Availability: Nov-2013



Hardware

CPU Name:	Intel Xeon E5-2637 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	3500
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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:	SUSE Linux Enterprise Server 11 SP3 (x86_64) 3.0.76-0.11-default
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:	No
File System:	ext3
System State:	Run level 3 (Full multiuser with network)

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

I620-G10 (Intel Xeon E5-2637 v2, 3.50 GHz)

SPECfp_rate2006 = 390

SPECfp_rate_base2006 = 385

CPU2006 license: 9046
Test sponsor: Sugon
Tested by: Sugon

Test date: Nov-2013
Hardware Availability: Nov-2013
Software Availability: Nov-2013

L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 4 x 450 GB SAS 10K RPM, RAID0
Other Hardware: None

Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	**467**	**465**	468	465	466	467	16	**467**	**465**	468	465	466	467
416.gamess	16	**973**	**322**	974	322	972	322	16	959	327	957	327	**959**	**327**
433.milc	16	324	453	324	453	**324**	**453**	16	**324**	**454**	325	452	324	454
434.zeusmp	16	**354**	**411**	353	412	356	409	16	**354**	**411**	353	412	356	409
435.gromacs	16	**288**	**397**	289	395	288	397	16	**283**	**404**	282	404	284	402
436.cactusADM	16	462	414	**463**	**413**	465	411	16	462	414	**463**	**413**	465	411
437.leslie3d	16	**563**	**267**	564	267	562	267	8	231	325	**233**	**323**	234	321
444.namd	16	509	252	507	253	**507**	**253**	16	501	256	502	256	**501**	**256**
447.dealII	16	312	586	**312**	**587**	311	588	16	312	586	**312**	**587**	311	588
450.soplex	16	**457**	**292**	460	290	457	292	8	253	263	254	263	**253**	**263**
453.povray	16	189	450	**190**	**448**	190	447	16	163	521	**164**	**520**	167	511
454.calculix	16	269	491	270	489	**269**	**490**	16	269	491	270	489	**269**	**490**
459.GemsFDTD	16	716	237	709	239	**711**	**239**	16	716	237	709	239	**711**	**239**
465.tonto	16	395	398	**398**	**396**	404	389	16	**373**	**422**	374	421	373	422
470.lbm	16	**544**	**404**	543	405	545	404	16	**544**	**404**	543	405	545	404
481.wrf	16	355	503	361	495	**356**	**502**	16	345	518	346	517	**345**	**518**
482.sphinx3	16	**784**	**398**	787	396	783	398	16	**907**	**344**	905	345	909	343

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"
```

Platform Notes

```
BIOS Configuration:
Intel Virtualization technology set to disabled
Power Technology set to performance
```

Continued on next page

Platform Notes (Continued)

```
Turbo boost set to enabled
DDR Speed set to force 1866
Sysinfo program /home/spec/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux-tn7k Fri Nov 22 10:03:40 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 E5-2637 v2 @ 3.50GHz
      2 "physical id"s (chips)
      16 "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  : 8
      physical 0: cores 1 2 3 4
      physical 1: cores 1 2 3 4
   cache size : 15360 KB

From /proc/meminfo
   MemTotal:       264519504 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 11 (x86_64)
      VERSION = 11
      PATCHLEVEL = 3

uname -a:
   Linux linux-tn7k 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
   (ccab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 22 00:58 last=S

SPEC is set to: /home/spec
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/md124p1   ext3  784G   77G  668G  11% /home/spec

Additional information from dmidecode:
  BIOS American Megatrends Inc. 3.0a 10/10/2013
  Memory:
   16x   16 GB
   16x Hynix Semiconducto HMT42GR7AFR4C 16 GB 1866 MHz
```

Continued on next page

Platform Notes (Continued)

```
 (End of data from sysinfo program)
There is a error in sysinfo output. There are only 16 DIMMs in this
system. The cause of this error is the sysinfo itself. The sysinfo
of revsion 6818 can't identify the correct memory information.
The memory information should be:
    Memory:
     16x Hynix Semiconducto HMT42GR7AFR4C 16 GB 1866 MHz
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/spec/libs/32:/home/spec/libs/64:/home/spec/sh"

 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
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 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
```

Continued on next page

Base Portability Flags (Continued)

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 -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

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

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -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
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

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) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
-unroll2

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(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) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-malloc-options=3

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

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

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

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/Sugon-Platform-Settings-V1.2-IVB.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/Sugon-Platform-Settings-V1.2-IVB.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 19:37:57 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 December 2013.