SPEC® CFP2006 Result

SGI

SGI Rackable C2112-4RP3 (Intel Xeon E5-2670, 2.60 GHz)

$SPECfp^®_rate2006 = $ 481

$SPECfp_rate_base2006 = $ 468

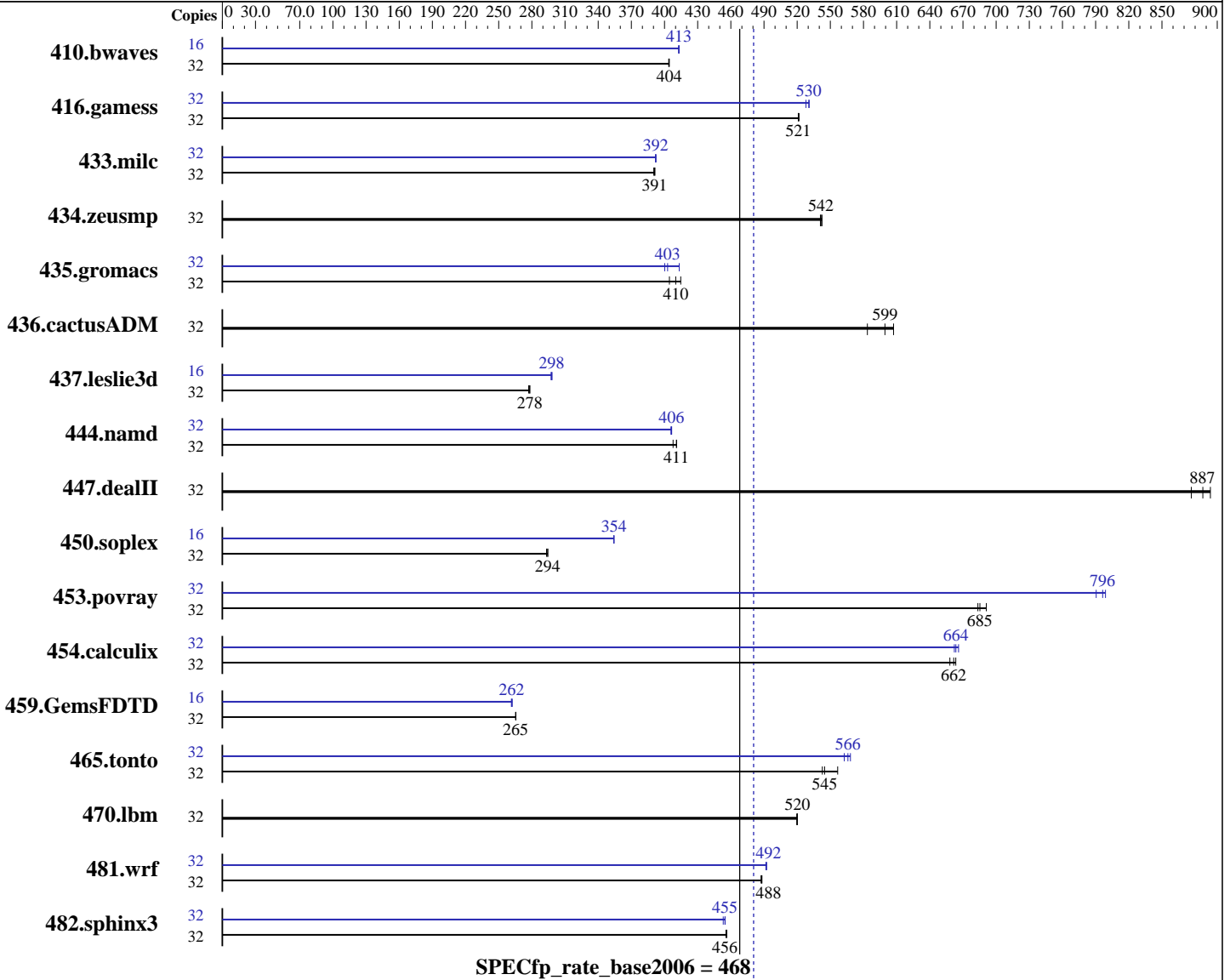| **CPU2006 license:**	4		**Test date:**	Jul-2012
Test sponsor:	SGI		**Hardware Availability:**	Mar-2012
Tested by:	SGI		**Software Availability:**	Feb-2012

SPECfp_rate_base2006 = 468

SPECfp_rate2006 = 481

Hardware

CPU Name:	Intel Xeon E5-2670
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 2 threads/core
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:	SUSE Linux Enterprise Server 11 (x86_64) SP2, Kernel 3.0.26-0.7-default
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:	No
File System:	NFSv3 IPoIB
System State:	Run level 3 (multi-user)

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

SGI

SGI Rackable C2112-4RP3 (Intel Xeon E5-2670, 2.60 GHz)

$SPECfp_rate2006 = $ 481

$SPECfp_rate_base2006 = $ 468

CPU2006 license: 4	**Test date:** Jul-2012
Test sponsor: SGI	**Hardware Availability:** Mar-2012
Tested by: SGI	**Software Availability:** Feb-2012

L3 Cache:	20 MB I+D on chip per chip	Base Pointers:	32/64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)	Other Software:	Microquill SmartHeap V9.01
Disk Subsystem:	9.1 TB RAID 5		
	90 x 146 GB SAS (Seagate Savvio 10k.3)		
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	1076	404	**1076**	**404**	1077	404	16	**526**	**413**	527	413	526	413
416.gamess	32	1203	521	1201	522	**1202**	**521**	32	1187	528	1180	531	**1181**	**530**
433.milc	32	**752**	**391**	753	390	751	391	32	749	392	750	392	**749**	**392**
434.zeusmp	32	**538**	**542**	538	541	537	542	32	**538**	**542**	538	541	537	542
435.gromacs	32	551	415	565	404	**557**	**410**	32	**567**	**403**	571	400	553	413
436.cactusADM	32	**638**	**599**	630	607	655	584	32	**638**	**599**	630	607	655	584
437.leslie3d	32	1081	278	**1082**	**278**	1085	277	16	**505**	**298**	506	297	504	298
444.namd	32	**625**	**411**	629	408	625	411	32	631	406	**632**	**406**	632	406
447.dealII	32	410	894	418	877	**413**	**887**	32	410	894	418	877	**413**	**887**
450.soplex	32	**907**	**294**	907	294	910	293	16	**377**	**354**	377	354	377	354
453.povray	32	**248**	**685**	249	683	246	691	32	**214**	**796**	213	799	215	790
454.calculix	32	**399**	**662**	398	663	401	658	32	399	662	**398**	**664**	396	666
459.GemsFDTD	32	1278	266	1279	265	**1279**	**265**	16	**648**	**262**	649	261	647	262
465.tonto	32	580	543	**578**	**545**	566	557	32	560	563	**556**	**566**	554	568
470.lbm	32	845	520	**845**	**520**	846	520	32	845	520	**845**	**520**	846	520
481.wrf	32	**733**	**488**	732	488	734	487	32	**726**	**492**	727	492	726	492
482.sphinx3	32	1369	456	1367	456	**1368**	**456**	32	1376	453	**1372**	**455**	1371	455

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"

SGI

SGI Rackable C2112-4RP3 (Intel Xeon E5-2670, 2.60 GHz)

$SPECfp\_rate2006 =$ 481

$SPECfp\_rate\_base2006 =$ 468

CPU2006 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Jul-2012
Hardware Availability: Mar-2012
Software Availability: Feb-2012

Platform Notes

```
Sysinfo program /store/cma/cpu2006-v1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on n015 Wed Jul 11 14:11:44 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
   model name : Intel(R) Xeon(R) CPU E5-2670 0 @ 2.60GHz
      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:       132116972 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 = 2
   sgi-accelerate-release: SGI Accelerate 1.4, Build 706r14.sles11sp2-1204092008
   sgi-foundation-release: SGI Foundation Software 2.6, Build
   706r14.sles11sp2-1204092008
   sgi-mpi-release: SGI MPI 1.4, Build 706r14.sles11sp2-1204092008
   sgi-upc-release: SGI UPC 1.4, Build 706r14.sles11sp2-1204092008

uname -a:
   Linux n015 3.0.26-0.7-default #1 SMP Tue Apr 17 10:27:57 UTC 2012 (3829766)
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 26 05:48 last=S

SPEC is set to: /store/cma/cpu2006-v1.2
   Filesystem              Type  Size  Used Avail Use% Mounted on
   10.149.69.200:/mnt/data nfs   9.1T  5.0T  4.2T  55% /nas

Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

SGI

SGI Rackable C2112-4RP3 (Intel Xeon E5-2670, 2.60 GHz)

$SPECfp_rate2006 = $ 481

$SPECfp_rate_base2006 = $ 468

CPU2006 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Jul-2012
Hardware Availability: Mar-2012
Software Availability: Feb-2012

Platform Notes (Continued)

       (End of data from sysinfo program)

General Notes

    Environment variables set by runspec before the start of the run:
    LD_LIBRARY_PATH = "/store/cma/cpu2006-v1.2/libs/32:/store/cma/cpu2006-v1.2/libs/64"

     Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
     memory using RHEL5.5
     Filesystem page cache cleared with:
     echo 1>   /proc/sys/vm/drop_caches
     runspec command invoked through numactl i.e.:
     numactl --interleave=all runspec <etc>
     Transparent Huge Pages enabled with:
     echo always > /sys/kernel/mm/transparent_hugepage/enabled

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

SGI

SGI Rackable C2112-4RP3 (Intel Xeon E5-2670, 2.60 GHz)

$SPECfp\_rate2006 =$ 481

$SPECfp\_rate\_base2006 =$ 468

CPU2006 license: 4	**Test date:**	Jul-2012
Test sponsor: SGI	**Hardware Availability:**	Mar-2012
Tested by: SGI	**Software Availability:**	Feb-2012

Base Portability Flags (Continued)

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

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

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

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

SGI

SGI Rackable C2112-4RP3 (Intel Xeon E5-2670, 2.60 GHz)

$SPECfp\_rate2006 =$ 481

$SPECfp\_rate\_base2006 =$ 468

CPU2006 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Jul-2012
Hardware Availability: Mar-2012
Software Availability: Feb-2012

Peak Portability Flags (Continued)

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

     470.lbm: basepeak = yes

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

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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(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) -prof-use(pass 2) -unroll4 -ansi-alias
```

Fortran benchmarks:

```
   410.bwaves: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -prof-use(pass 2) -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
```

SGI

SGI Rackable C2112-4RP3 (Intel Xeon E5-2670, 2.60 GHz)

$SPECfp_rate2006 = $ 481

$SPECfp_rate_base2006 = $ 468

CPU2006 license: 4		**Test date:**	Jul-2012
Test sponsor:	SGI	**Hardware Availability:**	Mar-2012
Tested by:	SGI	**Software Availability:**	Feb-2012

Peak Optimization Flags (Continued)

```
434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
              -opt-mem-layout-trans=3

481.wrf: Same as 454.calculix
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/SGI-platform-SNB-2S.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/SGI-platform-SNB-2S.xml

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 10:57:46 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 29 August 2012.