SPEC® CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

SuperServer 6028R-TR
(X10DRi , Intel Xeon E5-2683 v4)

$SPECfp^{®}2006 =$ 116
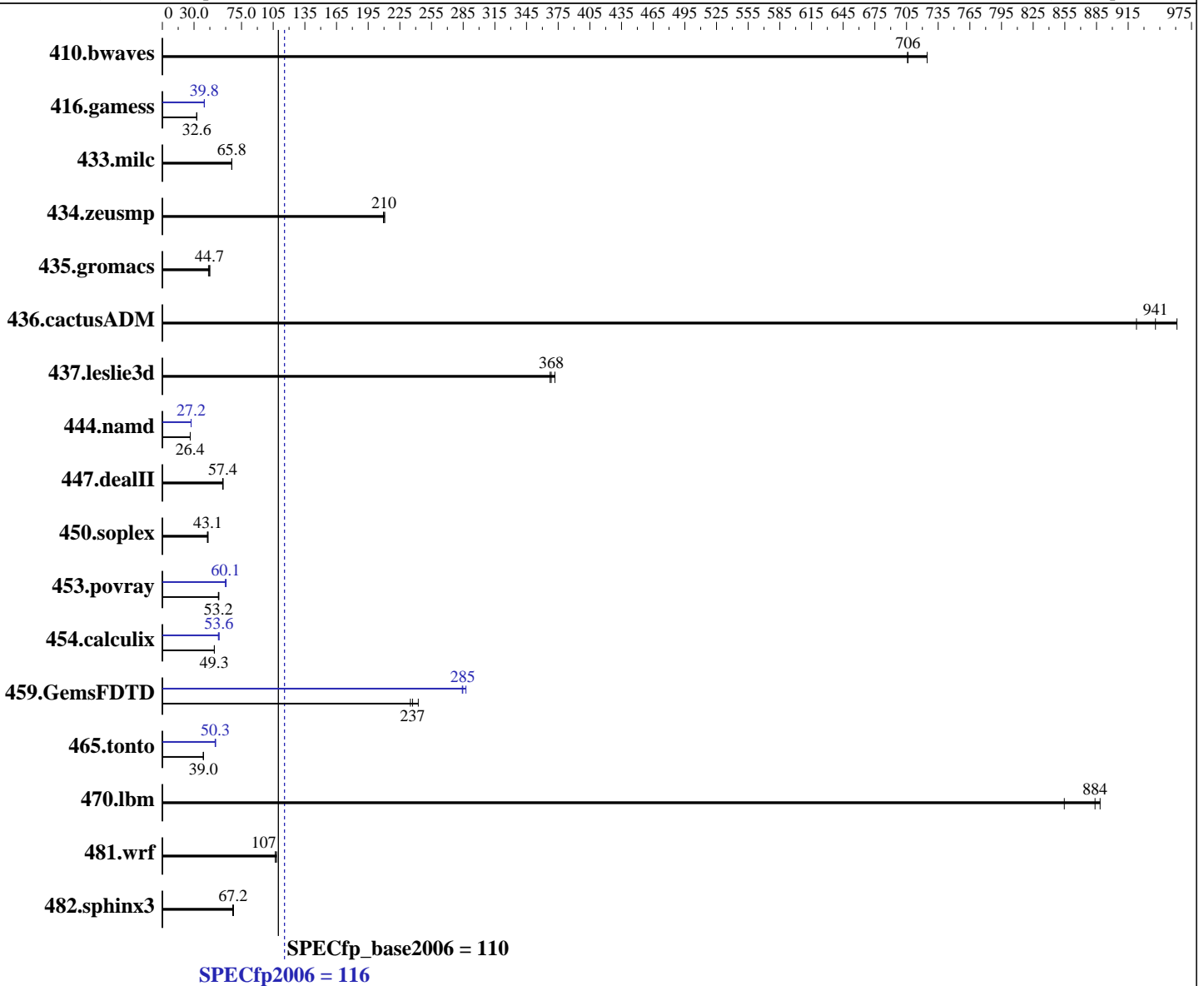
$SPECfp\_base2006 =$ 110

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Apr-2016
Hardware Availability: Mar-2016
Software Availability: Sep-2015

410.bwaves	706
416.gamess	39.8 / 32.6
433.milc	65.8
434.zeusmp	210
435.gromacs	44.7
436.cactusADM	941
437.leslie3d	368
444.namd	27.2 / 26.4
447.dealII	57.4
450.soplex	43.1
453.povray	60.1 / 53.2
454.calculix	53.6 / 49.3
459.GemsFDTD	285 / 237
465.tonto	50.3 / 39.0
470.lbm	884
481.wrf	107
482.sphinx3	67.2

SPECfp_base2006 = 110

SPECfp2006 = 116

Hardware

CPU Name:	Intel Xeon E5-2683 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2100
FPU:	Integrated
CPU(s) enabled:	32 cores, 2 chips, 16 cores/chip
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:	Kernel 3.12.49-11-default
Compiler:	C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	xfs
System State:	Run level 5
Base Pointers:	64-bit

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

SuperServer 6028R-TR
(X10DRi , Intel Xeon E5-2683 v4)

$SPECfp2006 =$ 116

$SPECfp\_base2006 =$ 110

CPU2006 license: 001176	
Test sponsor: Supermicro	
Tested by: Supermicro	

Test date:	Apr-2016
Hardware Availability:	Mar-2016
Software Availability:	Sep-2015

L3 Cache:	40 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem:	1 x 300 GB SATA III , 10000 RPM
Other Hardware:	None

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

Results Table

Benchmark	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	19.3	706	18.8	725	**19.2**	**706**	19.3	706	18.8	725	**19.2**	**706**
416.gamess	**600**	**32.6**	600	32.6	601	32.6	493	39.7	492	39.8	**493**	**39.8**
433.milc	140	65.8	**140**	**65.8**	140	65.8	140	65.8	**140**	**65.8**	140	65.8
434.zeusmp	**43.3**	**210**	43.4	209	43.2	211	**43.3**	**210**	43.4	209	43.2	211
435.gromacs	159	45.0	**160**	**44.7**	163	43.7	159	45.0	**160**	**44.7**	163	43.7
436.cactusADM	**12.7**	**941**	12.9	923	12.4	961	**12.7**	**941**	12.9	923	12.4	961
437.leslie3d	**25.5**	**368**	25.3	372	25.6	367	**25.5**	**368**	25.3	372	25.6	367
444.namd	304	26.4	304	26.4	**304**	**26.4**	295	27.2	**295**	**27.2**	294	27.3
447.dealII	**199**	**57.4**	199	57.5	200	57.1	**199**	**57.4**	199	57.5	200	57.1
450.soplex	196	42.6	193	43.3	**193**	**43.1**	196	42.6	193	43.3	**193**	**43.1**
453.povray	100	53.1	**100**	**53.2**	99.3	53.6	89.1	59.7	**88.6**	**60.1**	88.0	60.5
454.calculix	**167**	**49.3**	168	49.2	167	49.3	154	53.7	**154**	**53.6**	156	53.0
459.GemsFDTD	43.8	242	45.1	235	**44.8**	**237**	36.9	288	**37.3**	**285**	37.3	284
465.tonto	252	39.0	**252**	**39.0**	254	38.7	197	50.0	**196**	**50.3**	195	50.4
470.lbm	16.1	855	15.5	888	**15.5**	**884**	16.1	855	15.5	888	**15.5**	**884**
481.wrf	**104**	**107**	104	107	103	108	**104**	**107**	104	107	103	108
482.sphinx3	293	66.6	289	67.4	**290**	**67.2**	293	66.6	289	67.4	**290**	**67.2**

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 Settings:
Early Snoop = Disable
Home Dir Snoop with IVT- Style OSB = Disable
Enforce POR = Disabled
Hyper-Threading (ALL) = Disable
Sysinfo program /home/SPEC2K6/SPEC2006-V12/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on 113-172 Wed Apr 13 22:31:22 2016

This section contains SUT (System Under Test) info as seen by
```

Supermicro

SuperServer 6028R-TR
(X10DRi , Intel Xeon E5-2683 v4)

$SPECfp2006 =$ 116

$SPECfp\_base2006 =$ 110

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Apr-2016
Hardware Availability: Mar-2016
Software Availability: Sep-2015

Platform Notes (Continued)

```
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 E5-2683 v4 @ 2.10GHz
      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 : 16
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
      physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
   cache size : 40960 KB

From /proc/meminfo
   MemTotal:      264364892 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   SUSE Linux Enterprise Server 12 SP1

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 1
      # This file is deprecated and will be removed in a future service pack or
      release.
      # Please check /etc/os-release for details about this release.
   os-release:
      NAME="SLES"
      VERSION="12-SP1"
      VERSION_ID="12.1"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
   Linux 113-172 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
   (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 5 Apr 13 16:47

SPEC is set to: /home/SPEC2K6/SPEC2006-V12
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/md126p4    xfs   237G  9.0G  228G   4% /home
Additional information from dmidecode:
```

SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

SuperServer 6028R-TR
(X10DRi , Intel Xeon E5-2683 v4)

$SPECfp2006 =$ 116

$SPECfp\_base2006 =$ 110

Platform Notes (Continued)

```
    Warning: Use caution when you interpret this section. The 'dmidecode' program
    reads system data which is "intended to allow hardware to be accurately
    determined", but the intent may not be met, as there are frequent changes to
    hardware, firmware, and the "DMTF SMBIOS" standard.

  BIOS American Megatrends Inc. 2.0 12/30/2015
  Memory:
    16x Hynix Semiconductor HMA42GR7AFR4N-UH 16 GB 2 rank 2400 MHz

  (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 = "/home/SPEC2K6/SPEC2006-V12/libs/32:/home/SPEC2K6/SPEC2006-V12/libs/64:/home/SPEC2K6/SPEC2006-V12/sh"
OMP_NUM_THREADS = "32"

  Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
  memory using RedHat EL 7.1
  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
```

Continued on next page

Supermicro

SuperServer 6028R-TR
(X10DRi , Intel Xeon E5-2683 v4)

$SPECfp2006 = $ 116

$SPECfp_base2006 = $ 110

CPU2006 license: 001176	**Test date:** Apr-2016
Test sponsor: Supermicro	**Hardware Availability:** Mar-2016
Tested by: Supermicro	**Software Availability:** Sep-2015

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:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
    -ansi-alias
```

C++ benchmarks:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
    -xCORE-AVX2 -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
```

SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

SuperServer 6028R-TR
(X10DRi , Intel Xeon E5-2683 v4)

$SPECfp2006 =$ 116

$SPECfp\_base2006 =$ 110

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Apr-2016
Hardware Availability: Mar-2016
Software Availability: Sep-2015

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

      433.milc: basepeak = yes

      470.lbm: basepeak = yes

    482.sphinx3: basepeak = yes

C++ benchmarks:

    444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
           -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
           -par-num-threads=1(pass 1) -prof-use(pass 2) -fno-alias
           -auto-ilp32

    447.dealII: basepeak = yes

    450.soplex: basepeak = yes

    453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
           -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
           -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4
           -ansi-alias

Fortran benchmarks:

    410.bwaves: basepeak = yes

    416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
           -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
           -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
           -inline-level=0 -scalar-rep-

    434.zeusmp: basepeak = yes

    437.leslie3d: basepeak = yes

  459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
           -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
           -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
           -inline-level=0 -opt-prefetch -parallel

    465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
           -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
           -par-num-threads=1(pass 1) -prof-use(pass 2) -inline-calloc

Supermicro

SuperServer 6028R-TR
(X10DRi , Intel Xeon E5-2683 v4)

$SPECfp2006 =$ 116

$SPECfp\_base2006 =$ 110

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Apr-2016
Hardware Availability: Mar-2016
Software Availability: Sep-2015

Peak Optimization Flags (Continued)

465.tonto (continued):
            -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -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-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.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 Tue May 17 16:51:45 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 May 2016.