SPEC® CFP2006 Result

Supermicro

SuperServer 5019S-L
(X11SSL-F , Intel Xeon E3-1260L v5)

$SPECfp^{®}2006 =$ 99.0

$SPECfp\_base2006 =$ 96.8

Benchmark	Result
410.bwaves	142
416.gamess	55.4 / 49.4
433.milc	113
434.zeusmp	211
435.gromacs	66.4
436.cactusADM	363
437.leslie3d	109
444.namd	37.4 / 37.1
447.dealII	81.3
450.soplex	55.8
453.povray	81.5 / 72.5
454.calculix	78.9 / 77.1
459.GemsFDTD	85.1 / 83.8
465.tonto	73.7 / 66.1
470.lbm	189
481.wrf	131
482.sphinx3	101

SPECfp_base2006 = 96.8
SPECfp2006 = 99.0

Hardware

CPU Name:	Intel Xeon E3-1260L v5
CPU Characteristics:	Intel Turbo Boost Technology up to 3.90 GHz
CPU MHz:	2900
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.el7.x86_64
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 3 (multi-user)

Continued on next page

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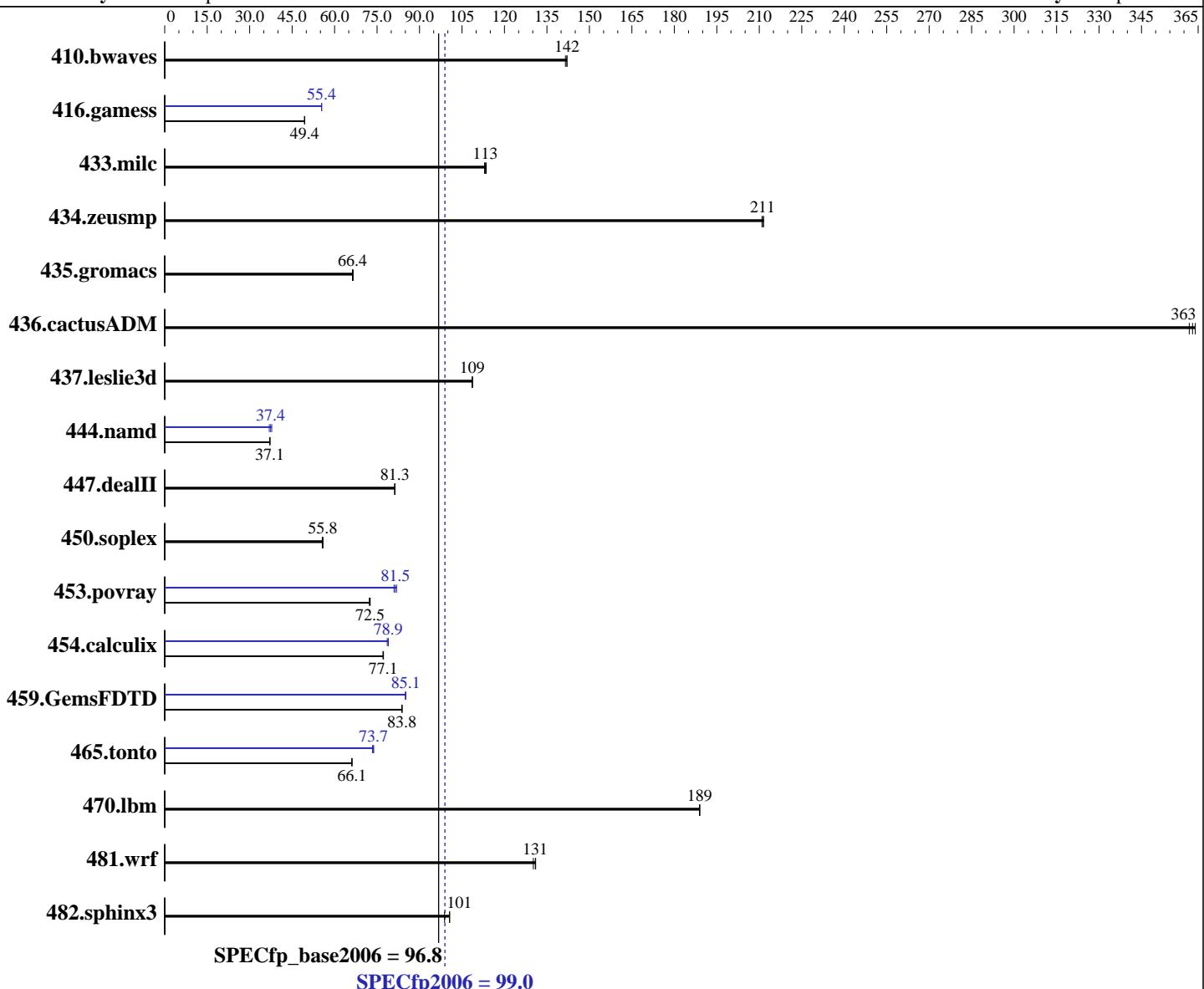
$SPECfp2006 =$ 99.0

$SPECfp\_base2006 =$ 96.8

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

Test date:	Dec-2015		
Hardware Availability:	Oct-2015		
Software Availability:	Sep-2015		

L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB (4 x 8 GB 2Rx8 PC4-2133P-U)
Disk Subsystem:	1 x 600 GB SATA, 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	**95.7**	**142**	96.0	142	95.7	142	**95.7**	**142**	96.0	142	95.7	142
416.gamess	396	49.4	396	49.4	**396**	**49.4**	**353**	**55.4**	353	55.4	354	55.4
433.milc	81.3	113	**81.0**	**113**	80.8	114	81.3	113	**81.0**	**113**	80.8	114
434.zeusmp	**43.1**	**211**	43.1	211	43.0	212	**43.1**	**211**	43.1	211	43.0	212
435.gromacs	**108**	**66.4**	108	66.3	107	66.5	**108**	**66.4**	108	66.3	107	66.5
436.cactusADM	**32.9**	**363**	32.8	364	33.0	362	**32.9**	**363**	32.8	364	33.0	362
437.leslie3d	86.5	109	86.5	109	**86.5**	**109**	86.5	109	86.5	109	**86.5**	**109**
444.namd	**216**	**37.1**	216	37.2	216	37.1	217	36.9	212	37.8	**214**	**37.4**
447.dealII	141	81.2	**141**	**81.3**	141	81.3	141	81.2	**141**	**81.3**	141	81.3
450.soplex	**150**	**55.8**	150	55.6	149	55.9	**150**	**55.8**	150	55.6	149	55.9
453.povray	**73.4**	**72.5**	73.3	72.6	73.6	72.3	65.7	81.0	65.0	81.9	**65.3**	**81.5**
454.calculix	**107**	**77.1**	107	77.1	107	77.3	105	78.6	**105**	**78.9**	104	79.0
459.GemsFDTD	127	83.8	127	83.9	**127**	**83.8**	**125**	**85.1**	125	85.0	125	85.1
465.tonto	149	66.1	**149**	**66.1**	149	66.2	**133**	**73.7**	133	73.8	134	73.4
470.lbm	**72.7**	**189**	72.7	189	72.7	189	**72.7**	**189**	72.7	189	72.7	189
481.wrf	**85.3**	**131**	85.3	131	85.8	130	**85.3**	**131**	85.3	131	85.8	130
482.sphinx3	197	98.8	**194**	**101**	194	101	197	98.8	**194**	**101**	194	101

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

    Sysinfo program /home/cpu2006/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on localhost.localdomain Thu Dec 10 10:53:25 2015

    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 E3-1260L v5 @ 2.90GHz
                        Continued on next page

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Test sponsor: Supermicro
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Test date: Dec-2015
Hardware Availability: Oct-2015
Software Availability: Sep-2015

Platform Notes (Continued)

```
     1 "physical id"s (chips)
     8 "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 0 1 2 3
  cache size : 8192 KB

From /proc/meminfo
  MemTotal:      32602468 kB
  HugePages_Total:      0
  Hugepagesize:      2048 kB

From /etc/*release* /etc/*version*
  os-release:
     NAME="Red Hat Enterprise Linux Server"
     VERSION="7.1 (Maipo)"
     ID="rhel"
     ID_LIKE="fedora"
     VERSION_ID="7.1"
     PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
     ANSI_COLOR="0;31"
     CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
  redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
  system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
  system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

uname -a:
  Linux localhost.localdomain 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38
  EST 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 9 10:50

SPEC is set to: /home/cpu2006
  Filesystem          Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs  412G  164G  248G  40% /home
Additional information from dmidecode:

  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. 1.0b 11/20/2015
  Memory:
  4x Micron 16ATF1G64AZ-2G1A2 8 GB 2 rank 2133 MHz

(End of data from sysinfo program)
```

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CPU2006 license: 001176		**Test date:**	Dec-2015
Test sponsor: Supermicro		**Hardware Availability:**	Oct-2015
Tested by: Supermicro		**Software Availability:**	Sep-2015

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/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "4"

 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
     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:
```
-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
```

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:

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Peak Optimization Flags (Continued)

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`
`-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`

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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

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

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