SPEC® CFP2006 Result
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Supermicro

SuperServer 2027TR-D70RF (X9DRT-HF, Intel Xeon E5-2630L, 2.0GHz)

$SPECfp^{®}2006 =$ 64.6

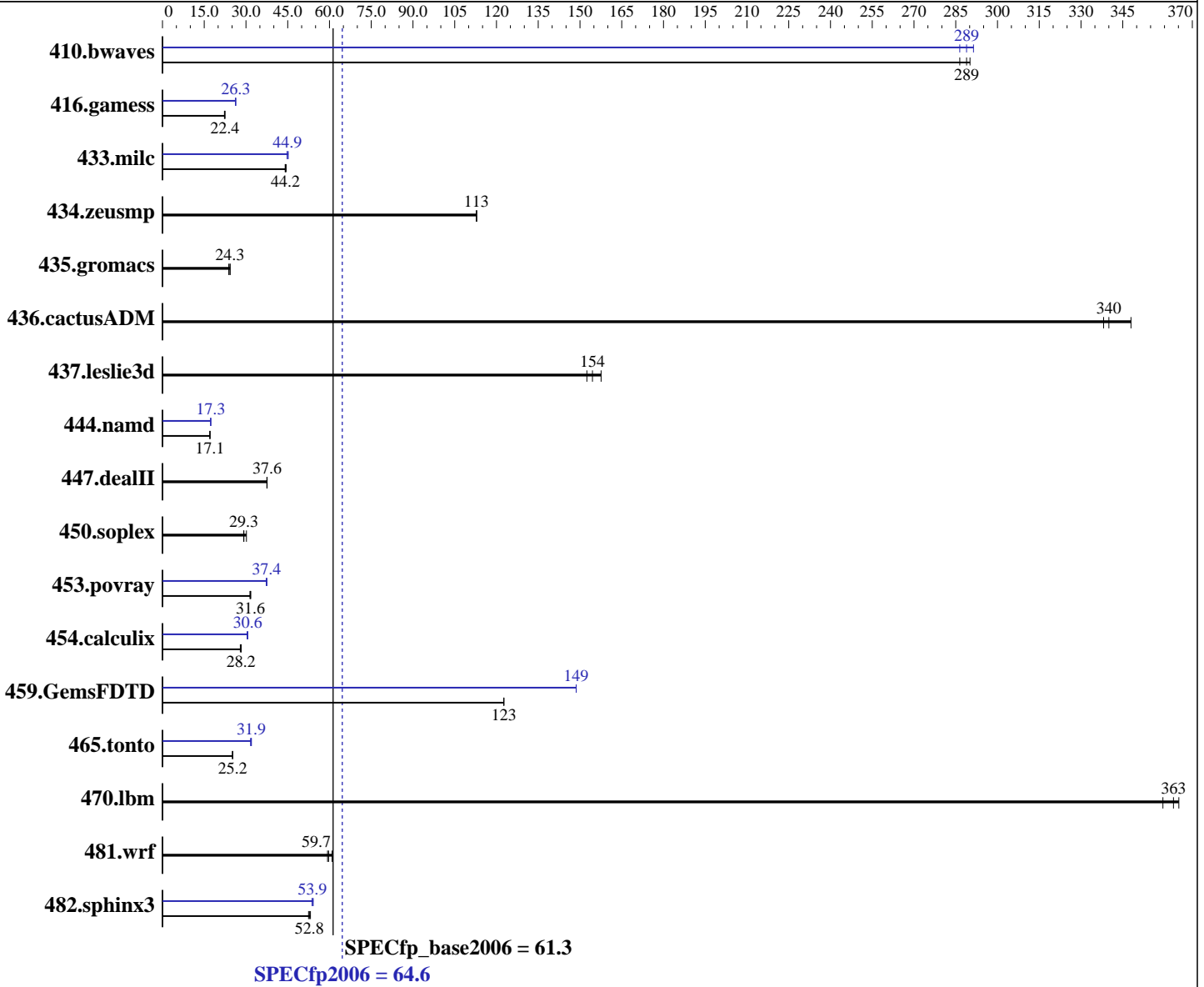$SPECfp\_base2006 =$ 61.3

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2012

Hardware Availability: Mar-2012

Software Availability: Oct-2011

Benchmark	Value
410.bwaves	289 / 289
416.gamess	26.3 / 22.4
433.milc	44.9 / 44.2
434.zeusmp	113
435.gromacs	24.3
436.cactusADM	340
437.leslie3d	154
444.namd	17.3 / 17.1
447.dealII	37.6
450.soplex	29.3
453.povray	37.4 / 31.6
454.calculix	30.6 / 28.2
459.GemsFDTD	149 / 123
465.tonto	31.9 / 25.2
470.lbm	363
481.wrf	59.7
482.sphinx3	53.9 / 52.8

SPECfp_base2006 = 61.3

SPECfp2006 = 64.6

Hardware

CPU Name: Intel Xeon E5-2630L

CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz

CPU MHz: 2000

FPU: Integrated

CPU(s) enabled: 12 cores, 2 chips, 6 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: Red Hat Enterprise Linux Server release 6.1 (Santiago) 2.6.32-131.0.15.el6.x86_64

Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux

Auto Parallel: Yes

File System: ext4

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

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L3 Cache:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx8 PC3-12800R-11, ECC, operate @ 1600MHz)
Disk Subsystem:	1 x 1 TB SATA II, 7200 RPM
Other Hardware:	None
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	46.8	290	**47.0**	**289**	47.4	286	47.4	286	46.6	291	**47.0**	**289**
416.gamess	**873**	**22.4**	880	22.3	873	22.4	**745**	**26.3**	744	26.3	746	26.3
433.milc	208	44.1	**208**	**44.2**	207	44.4	**205**	**44.9**	205	44.8	203	45.2
434.zeusmp	**80.6**	**113**	80.6	113	80.6	113	**80.6**	**113**	80.6	113	80.6	113
435.gromacs	300	23.8	294	24.3	**294**	**24.3**	300	23.8	294	24.3	**294**	**24.3**
436.cactusADM	**35.1**	**340**	34.3	348	35.3	338	**35.1**	**340**	34.3	348	35.3	338
437.leslie3d	**60.8**	**154**	61.6	152	59.6	158	**60.8**	**154**	61.6	152	59.6	158
444.namd	**470**	**17.1**	471	17.0	470	17.1	463	17.3	463	17.3	**463**	**17.3**
447.dealII	**305**	**37.6**	304	37.6	305	37.5	**305**	**37.6**	304	37.6	305	37.5
450.soplex	276	30.2	286	29.2	**285**	**29.3**	276	30.2	286	29.2	**285**	**29.3**
453.povray	168	31.7	**168**	**31.6**	169	31.4	143	37.3	142	37.5	**142**	**37.4**
454.calculix	292	28.3	295	28.0	**292**	**28.2**	**269**	**30.6**	271	30.4	269	30.6
459.GemsFDTD	**86.5**	**123**	86.5	123	86.5	123	71.4	149	71.4	149	**71.4**	**149**
465.tonto	392	25.1	**390**	**25.2**	390	25.2	308	31.9	311	31.6	**308**	**31.9**
470.lbm	**37.8**	**363**	38.2	359	37.6	365	**37.8**	**363**	38.2	359	37.6	365
481.wrf	**187**	**59.7**	183	60.9	188	59.3	**187**	**59.7**	183	60.9	188	59.3
482.sphinx3	**369**	**52.8**	371	52.5	367	53.2	**362**	**53.9**	363	53.8	360	54.2

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

```
Sysinfo program /home/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on 131-32.inet Wed Apr 18 06:11:25 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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Test sponsor: Supermicro
Tested by: Supermicro

Test date: Apr-2012
Hardware Availability: Mar-2012
Software Availability: Oct-2011

Platform Notes (Continued)

```
      model name : Intel(R) Xeon(R) CPU E5-2630L 0 @ 2.00GHz
         2 "physical id"s (chips)
         24 "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 : 6
         siblings  : 12
         physical 0: cores 0 1 2 3 4 5
         physical 1: cores 0 1 2 3 4 5
      cache size : 15360 KB

   From /proc/meminfo
      MemTotal:      65948536 kB
      HugePages_Total:      0
      Hugepagesize:      2048 kB

   /usr/bin/lsb_release -d
      Red Hat Enterprise Linux Server release 6.1 (Santiago)

   From /etc/*release* /etc/*version*
      redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
      system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

   uname -a:
      Linux 131-32.inet 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10 15:42:40 EDT
      2011 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Apr 16 11:29

   SPEC is set to: /home/cpu2006
      Filesystem     Type    Size  Used Avail Use% Mounted on
      /dev/mapper/vg_13132-lv_home
                     ext4    162G   47G  108G  31% /home

   Additional information from dmidecode:
     Memory:
      8x Hynix Semiconducto HMT31GR7CFR4C 8 GB 1333 MHz 1 rank

   (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
OMP_NUM_THREADS = "12"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

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General Notes (Continued)

```
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
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
   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
```

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Tested by: Supermicro

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Hardware Availability: Mar-2012

Software Availability: Oct-2011

Base Optimization Flags (Continued)

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: `basepeak = yes`

> 482.sphinx3: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias`
> `-parallel`

C++ benchmarks:

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Peak Optimization Flags (Continued)

```
     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: basepeak = yes

     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 -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: basepeak = yes

     437.leslie3d: basepeak = yes

     459.GemsFDTD: -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 -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: basepeak = yes

     454.calculix: -xAVX -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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.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/Supermicro-Platform-Settings-revA.xml

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

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