SPEC® CFP2006 Result
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Cisco Systems

Cisco UCS C24 M3 (Intel Xeon E5-2430L, 2.00 GHz)

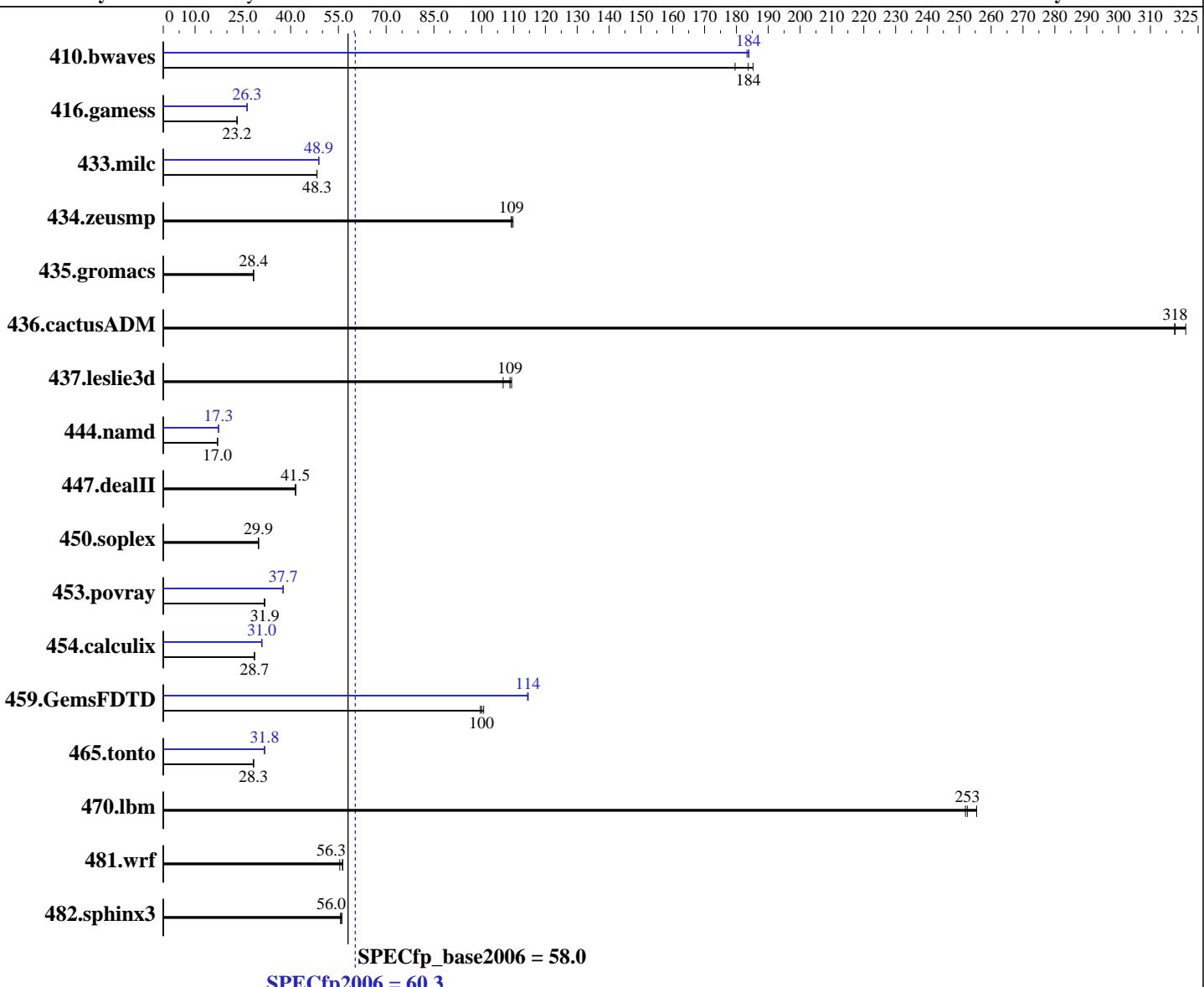$SPECfp^{®}2006 =$ 60.3

$SPECfp\_base2006 =$ 58.0

CPU2006 license:	9019	**Test date:**	Jun-2012
Test sponsor:	Cisco Systems	**Hardware Availability:**	Aug-2012
Tested by:	Cisco Systems	**Software Availability:**	Feb-2012

Benchmark results (base / peak):

- 410.bwaves: 184 / 184
- 416.gamess: 23.2 / 26.3
- 433.milc: 48.3 / 48.9
- 434.zeusmp: 109
- 435.gromacs: 28.4
- 436.cactusADM: 318
- 437.leslie3d: 109
- 444.namd: 17.0 / 17.3
- 447.dealII: 41.5
- 450.soplex: 29.9
- 453.povray: 31.9 / 37.7
- 454.calculix: 28.7 / 31.0
- 459.GemsFDTD: 100 / 114
- 465.tonto: 28.3 / 31.8
- 470.lbm: 253
- 481.wrf: 56.3
- 482.sphinx3: 56.0

SPECfp_base2006 = 58.0

SPECfp2006 = 60.3

Hardware

CPU Name:	Intel Xeon E5-2430L
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
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 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.3.293 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)
Disk Subsystem:	1 X 146 GB 15000 RPM SAS
Other Hardware:	None

System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

	Base						Peak					
Benchmark	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**74.0**	**184**	73.4	185	75.7	180	**74.0**	**184**	73.9	184	74.1	183
416.gamess	846	23.1	842	23.3	**845**	**23.2**	**745**	**26.3**	742	26.4	745	26.3
433.milc	**190**	**48.3**	190	48.3	190	48.3	188	48.8	188	48.9	**188**	**48.9**
434.zeusmp	82.8	110	**83.2**	**109**	83.2	109	82.8	110	**83.2**	**109**	83.2	109
435.gromacs	253	28.3	**252**	**28.4**	252	28.4	253	28.3	**252**	**28.4**	252	28.4
436.cactusADM	37.2	321	**37.6**	**318**	37.6	318	37.2	321	**37.6**	**318**	37.6	318
437.leslie3d	85.9	109	**86.3**	**109**	88.1	107	85.9	109	**86.3**	**109**	88.1	107
444.namd	**471**	**17.0**	471	17.0	471	17.0	**462**	**17.3**	462	17.4	463	17.3
447.dealII	**275**	**41.5**	276	41.5	275	41.6	**275**	**41.5**	276	41.5	275	41.6
450.soplex	279	29.9	278	30.0	**279**	**29.9**	279	29.9	278	30.0	**279**	**29.9**
453.povray	167	31.9	168	31.7	**167**	**31.9**	141	37.7	142	37.6	**141**	**37.7**
454.calculix	**288**	**28.7**	288	28.7	288	28.6	266	31.0	267	30.9	**266**	**31.0**
459.GemsFDTD	**106**	**100**	105	101	107	99.6	92.6	115	92.7	114	**92.7**	**114**
465.tonto	**347**	**28.3**	346	28.4	348	28.3	310	31.8	**309**	**31.8**	309	31.8
470.lbm	**54.4**	**253**	53.8	255	54.5	252	**54.4**	**253**	53.8	255	54.5	252
481.wrf	198	56.4	**199**	**56.3**	202	55.4	198	56.4	**199**	**56.3**	202	55.4
482.sphinx3	**348**	**56.0**	348	56.1	350	55.7	**348**	**56.0**	348	56.1	350	55.7

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 /opt/cpu2006-1.2/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on localhost.localdomain Thu Jun 14 16:06:54 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 date: Jun-2012
Hardware Availability: Aug-2012
Software Availability: Feb-2012

Platform Notes (Continued)

```
   model name : Intel(R) Xeon(R) CPU E5-2430L 0 @ 2.00GHz
      2 "physical id"s (chips)
      12 "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  : 6
      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:       99042484 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

 /usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.2 (Santiago)

 From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
   Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13
   EST 2011 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Jun 14 15:58

 SPEC is set to: /opt/cpu2006-1.2
   Filesystem     Type    Size  Used Avail Use% Mounted on
   /dev/sda1      ext4    134G   10G  118G   8% /

 Additional information from dmidecode:
   Memory:
     12x 0xCE00 M393B1K70DH0-YK0 8 GB 1600 MHz 2 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 = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"
OMP_NUM_THREADS = "12"
Intel HT Technology = disable
 Binaries compiled on a system with 2 X Intel Xeon E5-2690 CPU + 128 GB memory using RHEL 6.2
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

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General Notes (Continued)

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

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
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

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Base Optimization Flags (Continued)

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: basepeak = yes
```

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
```

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Peak Optimization Flags (Continued)

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-linux64.20120425.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.xml

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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 13:08:20 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 October 2012.