



# SPEC® CFP2006 Result

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## Cisco Systems

**SPECfp®2006 = 58.3**

Cisco UCS C24 M3 (Intel Xeon E5-2420, 1.90 GHz)

**SPECfp\_base2006 = 56.0**

CPU2006 license: 9019

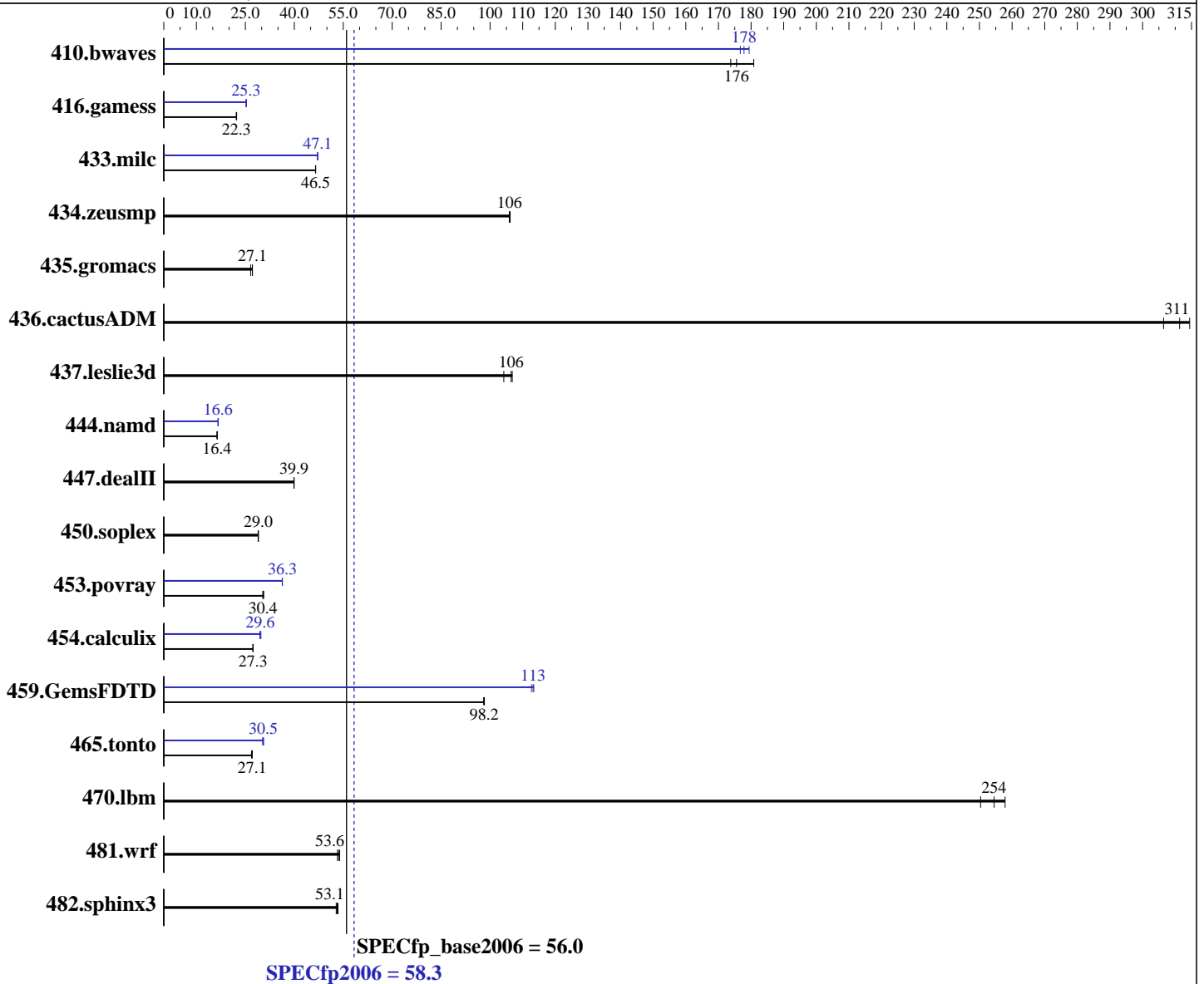
Test date: Aug-2012

Test sponsor: Cisco Systems

Hardware Availability: Aug-2012

Tested by: Cisco Systems

Software Availability: Feb-2012



**Hardware**

CPU Name: Intel Xeon E5-2420  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
 CPU MHz: 1900  
 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

Continued on next page



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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

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b><u>77.4</u></b>	<b><u>176</u></b>	75.2	181	78.2	174	<b><u>76.4</u></b>	<b><u>178</u></b>	75.7	179	76.9	177
416.gamess	877	22.3	882	22.2	<b><u>879</u></b>	<b><u>22.3</u></b>	<b><u>775</u></b>	<b><u>25.3</u></b>	775	25.3	774	25.3
433.milc	<b><u>197</u></b>	<b><u>46.5</u></b>	197	46.6	197	46.5	195	47.1	195	47.2	<b><u>195</u></b>	<b><u>47.1</u></b>
434.zeusmp	85.7	106	<b><u>85.9</u></b>	<b><u>106</u></b>	85.9	106	85.7	106	<b><u>85.9</u></b>	<b><u>106</u></b>	85.9	106
435.gromacs	<b><u>263</u></b>	<b><u>27.1</u></b>	268	26.6	263	27.2	<b><u>263</u></b>	<b><u>27.1</u></b>	268	26.6	263	27.2
436.cactusADM	<b><u>38.4</u></b>	<b><u>311</u></b>	38.0	314	39.0	306	<b><u>38.4</u></b>	<b><u>311</u></b>	38.0	314	39.0	306
437.leslie3d	88.0	107	<b><u>88.3</u></b>	<b><u>106</u></b>	90.2	104	88.0	107	<b><u>88.3</u></b>	<b><u>106</u></b>	90.2	104
444.namd	<b><u>491</u></b>	<b><u>16.4</u></b>	491	16.3	490	16.4	482	16.6	<b><u>482</u></b>	<b><u>16.6</u></b>	482	16.6
447.dealII	287	39.9	286	39.9	<b><u>287</u></b>	<b><u>39.9</u></b>	287	39.9	286	39.9	<b><u>287</u></b>	<b><u>39.9</u></b>
450.soplex	<b><u>288</u></b>	<b><u>29.0</u></b>	289	28.9	288	29.0	<b><u>288</u></b>	<b><u>29.0</u></b>	289	28.9	288	29.0
453.povray	174	30.6	<b><u>175</u></b>	<b><u>30.4</u></b>	175	30.4	147	36.3	146	36.4	<b><u>146</u></b>	<b><u>36.3</u></b>
454.calculix	<b><u>302</u></b>	<b><u>27.3</u></b>	302	27.3	301	27.4	<b><u>279</u></b>	<b><u>29.6</u></b>	280	29.4	277	29.8
459.GemsFDTD	108	98.0	108	98.3	<b><u>108</u></b>	<b><u>98.2</u></b>	<b><u>93.7</u></b>	<b><u>113</u></b>	93.6	113	94.1	113
465.tonto	<b><u>363</u></b>	<b><u>27.1</u></b>	366	26.9	363	27.1	325	30.3	<b><u>322</u></b>	<b><u>30.5</u></b>	322	30.6
470.lbm	53.3	258	54.9	250	<b><u>54.0</u></b>	<b><u>254</u></b>	53.3	258	54.9	250	<b><u>54.0</u></b>	<b><u>254</u></b>
481.wrf	210	53.3	<b><u>209</u></b>	<b><u>53.6</u></b>	207	53.9	210	53.3	<b><u>209</u></b>	<b><u>53.6</u></b>	207	53.9
482.sphinx3	365	53.4	369	52.8	<b><u>367</u></b>	<b><u>53.1</u></b>	365	53.4	369	52.8	<b><u>367</u></b>	<b><u>53.1</u></b>

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 Fri Aug 31 06:51:16 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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**CPU2006 license:** 9019

**Test date:** Aug-2012

**Test sponsor:** Cisco Systems

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### Platform Notes (Continued)

```

model name : Intel(R) Xeon(R) CPU E5-2420 0 @ 1.90GHz
  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 Aug 31 06:49

```

SPEC is set to: /opt/cpu2006-1.2
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal        ext4      134G  11G  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

```

Continued on next page



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## General Notes (Continued)

Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop\_caches

Submitted\_by: "Sheshgiri I (shei)" <shei@cisco.com>  
Submitted: Mon Sep 17 02:54:33 EDT 2012  
Submission: cpu2006-20120917-24469.sub

## 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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## 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: 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 other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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