



SPEC[®] CFP2006 Result

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Cisco Systems

SPECfp[®]2006 = 48.9

Cisco UCS B22 M3 (Intel Xeon E5-2403 v2, 1.80 GHz)

SPECfp_base2006 = 47.5

CPU2006 license: 9019

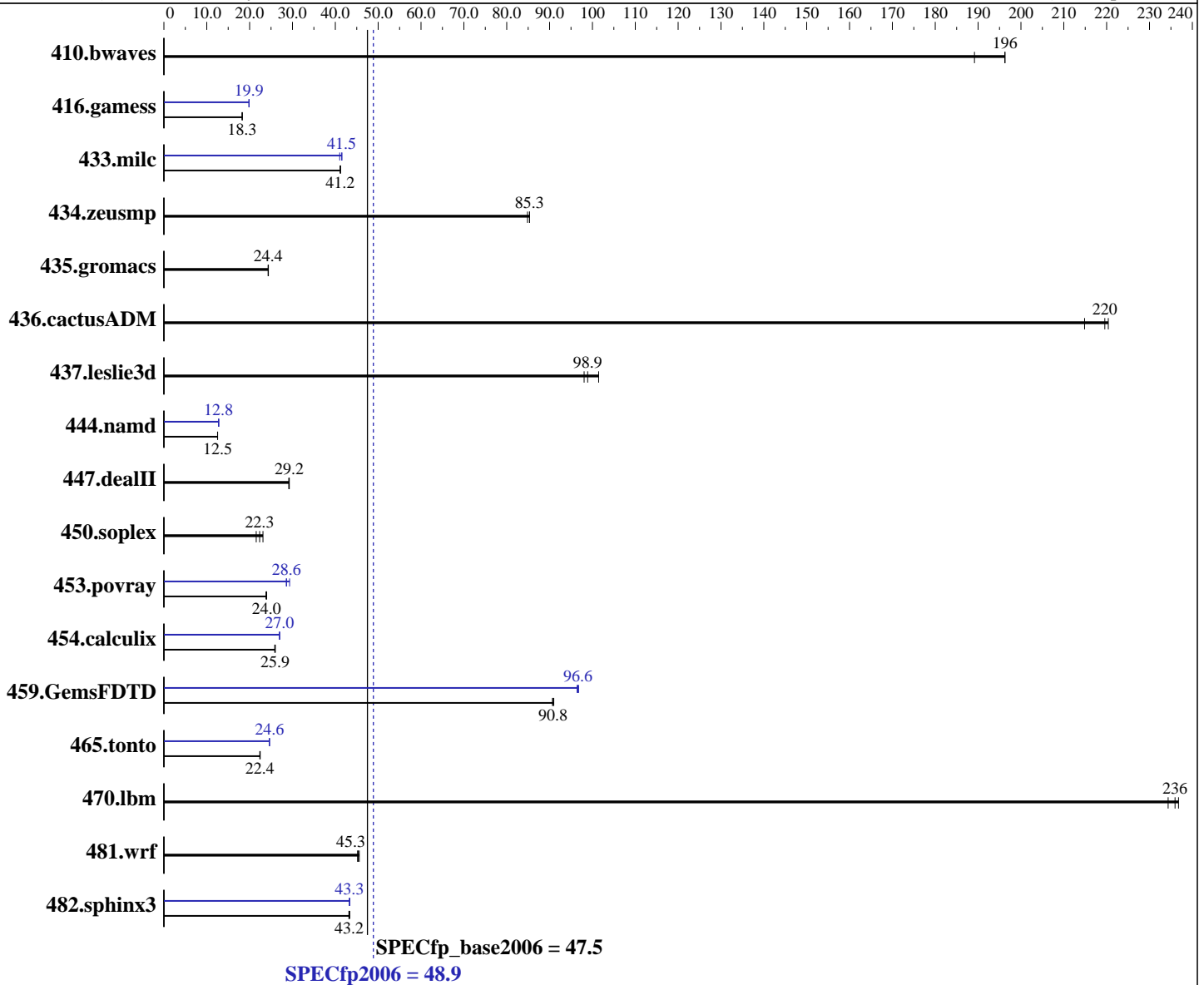
Test date: Jun-2014

Test sponsor: Cisco Systems

Hardware Availability: Jun-2014

Tested by: Cisco Systems

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2403 v2
 CPU Characteristics:
 CPU MHz: 1800
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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

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Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 2.6.32-431.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

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L3 Cache: 10 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 | 71.8 | 189 | 69.2 | 196 | 69.2 | 196 | 71.8 | 189 | 69.2 | 196 | 69.2 | 196 |
| 416.gamess | 1070 | 18.3 | 1071 | 18.3 | 1073 | 18.2 | 985 | 19.9 | 987 | 19.8 | 986 | 19.9 |
| 433.milc | 223 | 41.2 | 223 | 41.2 | 223 | 41.1 | 221 | 41.5 | 224 | 41.0 | 221 | 41.5 |
| 434.zeusmp | 107 | 85.3 | 107 | 85.3 | 107 | 84.8 | 107 | 85.3 | 107 | 85.3 | 107 | 84.8 |
| 435.gromacs | 293 | 24.4 | 293 | 24.4 | 294 | 24.3 | 293 | 24.4 | 293 | 24.4 | 294 | 24.3 |
| 436.cactusADM | 54.4 | 220 | 54.2 | 220 | 55.6 | 215 | 54.4 | 220 | 54.2 | 220 | 55.6 | 215 |
| 437.leslie3d | 95.9 | 98.1 | 92.7 | 101 | 95.1 | 98.9 | 95.9 | 98.1 | 92.7 | 101 | 95.1 | 98.9 |
| 444.namd | 640 | 12.5 | 640 | 12.5 | 641 | 12.5 | 628 | 12.8 | 628 | 12.8 | 627 | 12.8 |
| 447.dealII | 391 | 29.3 | 391 | 29.2 | 393 | 29.1 | 391 | 29.3 | 391 | 29.2 | 393 | 29.1 |
| 450.soplex | 387 | 21.5 | 361 | 23.1 | 373 | 22.3 | 387 | 21.5 | 361 | 23.1 | 373 | 22.3 |
| 453.povray | 222 | 24.0 | 223 | 23.8 | 222 | 24.0 | 181 | 29.3 | 186 | 28.6 | 186 | 28.6 |
| 454.calculix | 317 | 26.0 | 318 | 25.9 | 319 | 25.9 | 306 | 27.0 | 306 | 27.0 | 306 | 27.0 |
| 459.GemsFDTD | 117 | 90.7 | 117 | 91.0 | 117 | 90.8 | 110 | 96.4 | 110 | 96.6 | 110 | 96.8 |
| 465.tonto | 438 | 22.5 | 439 | 22.4 | 439 | 22.4 | 400 | 24.6 | 399 | 24.6 | 399 | 24.6 |
| 470.lbm | 58.2 | 236 | 58.6 | 234 | 58.0 | 237 | 58.2 | 236 | 58.6 | 234 | 58.0 | 237 |
| 481.wrf | 245 | 45.6 | 246 | 45.3 | 247 | 45.2 | 245 | 45.6 | 246 | 45.3 | 247 | 45.2 |
| 482.sphinx3 | 449 | 43.4 | 451 | 43.2 | 451 | 43.2 | 450 | 43.3 | 449 | 43.4 | 450 | 43.3 |

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

CPU performance set to HPC
 Power Technology set to Custom
 CPU Power State C6 set to Disabled
 CPU Power State C1 Enhanced set to Disabled
 Memory RAS configuration set to Maximum Performance
 DRAM Clock Throttling Set to Performance
 Sysinfo program /opt/cpu2006-1.4/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on B22M3 Wed Jun 25 00:49:17 2014

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Platform Notes (Continued)

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 E5-2403 v2 @ 1.80GHz

2 "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 : 4

physical 0: cores 0 1 2 3

physical 1: cores 0 1 2 3

cache size : 10240 KB

From /proc/meminfo

MemTotal: 99008384 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*

redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)

system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)

system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:

Linux B22M3 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64

x86_64 x86_64 GNU/Linux

run-level 3 Jun 25 00:46

SPEC is set to: /opt/cpu2006-1.4

Filesystem Type Size Used Avail Use% Mounted on

/dev/sdal ext4 134G 19G 109G 15% /

Additional information from dmidecode:

BIOS Cisco Systems, Inc. B22M3.2.2.1.8.042120141915 04/21/2014

Memory:

12x 0xCE00 M393B1K70DH0-YK0 8 GB 1333 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,compact,1,0"

LD_LIBRARY_PATH = "/opt/cpu2006-1.4/libs/32:/opt/cpu2006-1.4/libs/64:/opt/cpu2006-1.4/sh"

OMP_NUM_THREADS = "8"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB

memory using RedHat EL 6.4

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>

Submitted_by: "Sheshgiri I (shei)" <shei@cisco.com>

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General Notes (Continued)

Submitted: Wed Sep 17 01:52:38 EDT 2014
Submission: cpu2006-20140903-31182.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 -parallel -opt-prefetch -ansi-alias

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

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Base Optimization Flags (Continued)

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

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

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.dealIII: 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: basepeak = yes

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-

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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revB.xml>



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