



SPEC[®] CFP2006 Result

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Cisco Systems

SPECfp[®]2006 = 89.4

Cisco UCS C240 M3 (Intel Xeon E5-2680 2.7 GHz)

SPECfp_base2006 = 85.2

CPU2006 license: 9019

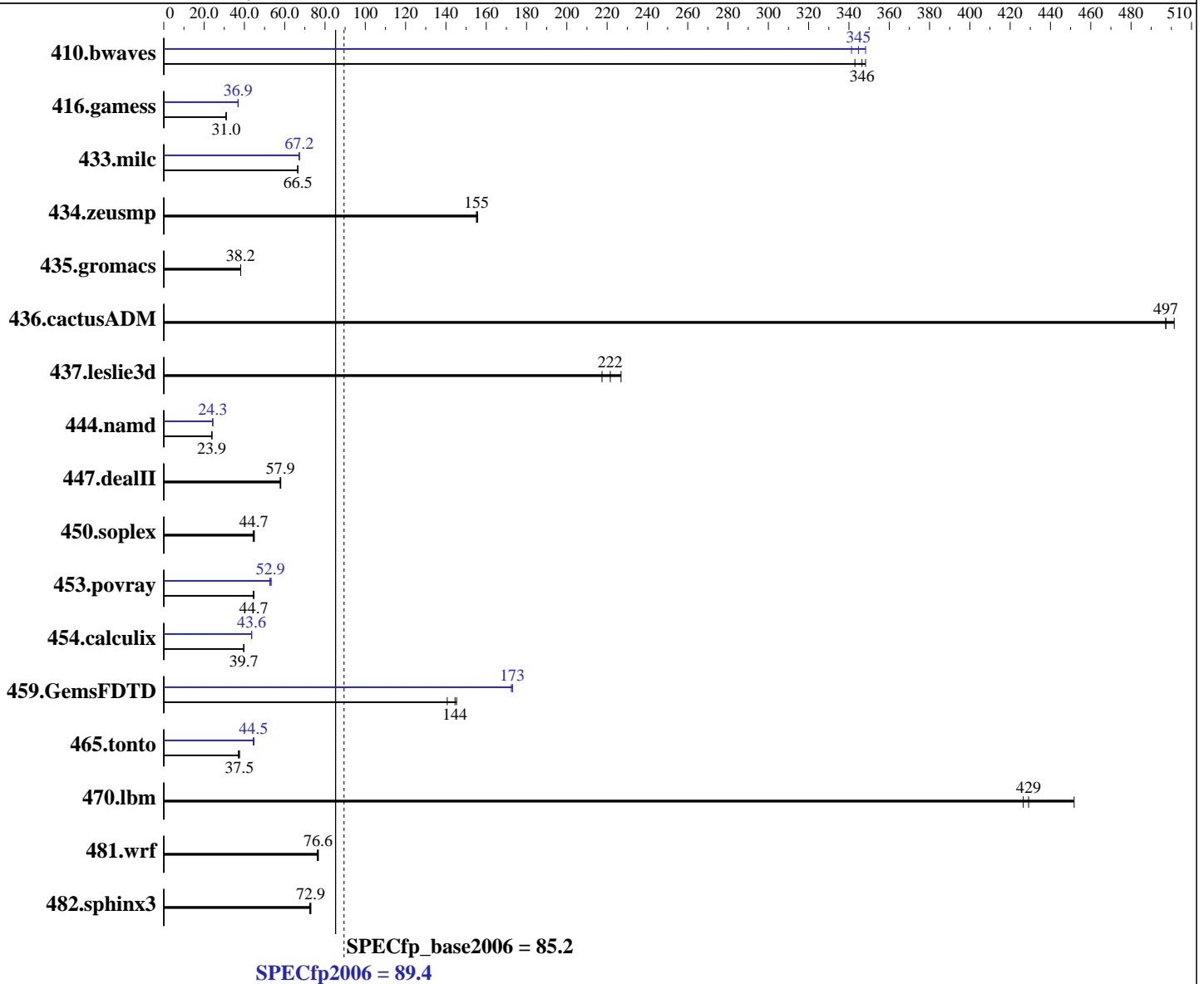
Test date: May-2012

Test sponsor: Cisco Systems

Hardware Availability: Jun-2012

Tested by: Cisco Systems

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-2680
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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 6.2 (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: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 1 X 73 GB 10000 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	39.6	343	39.0	348	<u>39.2</u>	<u>346</u>	<u>39.4</u>	<u>345</u>	39.0	348	39.8	341
416.gamess	634	30.9	<u>632</u>	<u>31.0</u>	632	31.0	<u>531</u>	<u>36.9</u>	531	36.9	531	36.9
433.milc	138	66.5	138	66.4	<u>138</u>	<u>66.5</u>	137	67.1	<u>137</u>	<u>67.2</u>	136	67.3
434.zeusmp	<u>58.6</u>	<u>155</u>	58.4	156	58.6	155	<u>58.6</u>	<u>155</u>	58.4	156	58.6	155
435.gromacs	<u>187</u>	<u>38.2</u>	187	38.2	187	38.2	<u>187</u>	<u>38.2</u>	187	38.2	187	38.2
436.cactusADM	23.8	501	<u>24.0</u>	<u>497</u>	24.0	497	23.8	501	<u>24.0</u>	<u>497</u>	24.0	497
437.leslie3d	43.2	217	<u>42.4</u>	<u>222</u>	41.4	227	43.2	217	<u>42.4</u>	<u>222</u>	41.4	227
444.namd	336	23.9	336	23.9	<u>336</u>	<u>23.9</u>	330	24.3	<u>330</u>	<u>24.3</u>	331	24.3
447.dealII	198	57.8	<u>198</u>	<u>57.9</u>	197	58.1	198	57.8	<u>198</u>	<u>57.9</u>	197	58.1
450.soplex	186	45.0	<u>186</u>	<u>44.7</u>	188	44.3	186	45.0	<u>186</u>	<u>44.7</u>	188	44.3
453.povray	<u>119</u>	<u>44.7</u>	120	44.3	119	44.7	99.8	53.3	<u>101</u>	<u>52.9</u>	101	52.7
454.calculix	208	39.6	207	39.8	<u>208</u>	<u>39.7</u>	189	43.6	189	43.6	<u>189</u>	<u>43.6</u>
459.GemsFDTD	73.0	145	<u>73.4</u>	<u>144</u>	75.4	141	61.3	173	<u>61.3</u>	<u>173</u>	61.5	172
465.tonto	<u>262</u>	<u>37.5</u>	266	37.0	262	37.5	<u>221</u>	<u>44.5</u>	222	44.4	220	44.8
470.lbm	32.2	426	<u>32.0</u>	<u>429</u>	30.4	452	32.2	426	<u>32.0</u>	<u>429</u>	30.4	452
481.wrf	<u>146</u>	<u>76.6</u>	146	76.7	147	76.2	<u>146</u>	<u>76.6</u>	146	76.7	147	76.2
482.sphinx3	267	72.9	269	72.4	<u>267</u>	<u>72.9</u>	267	72.9	269	72.4	<u>267</u>	<u>72.9</u>

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

BIOS Configuration:
 Processor Power State C6 set to Disabled
 Processor Power State C1 Enhanced set to Disabled
 Power Technology set to Custom
 Energy Performance set to Performance
 DRAM Clock Throttling set to Performance
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on localhost.localdomain Wed May 9 10:34:46 2012

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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      : Genuine Intel(R) CPU @ 2.70GHz
 2 "physical id"s (chips)
16 "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    : 8
  siblings     : 8
  physical 0   : cores 0 1 2 3 4 5 6 7
  physical 1   : cores 0 1 2 3 4 5 6 7
cache size     : 20480 KB

```

```

From /proc/meminfo
MemTotal:      132102608 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 May 9 10:18

```

SPEC is set to: /opt/cpu2006-1.2
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal       ext4      66G   9.9G   53G  16% /

```

Additional information from dmidecode:

```

Memory:
16x 0xCE00 M393B1K70DH0-YK0 8 GB 1600 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 = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"

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General Notes (Continued)

```
OMP_NUM_THREADS = "16"
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
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

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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:

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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/Cisco-Platform-Settings-V1.2.20130607.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/Cisco-Platform-Settings-V1.2.20130607.xml>



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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 06:11:08 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 June 2012.