



SPEC® CFP2006 Result

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Cisco Systems

Cisco UCS C480 M5 (Intel Xeon Platinum 8153
2.00GHz)

SPECfp®2006 = **125**

SPECfp_base2006 = **120**

CPU2006 license: 9019

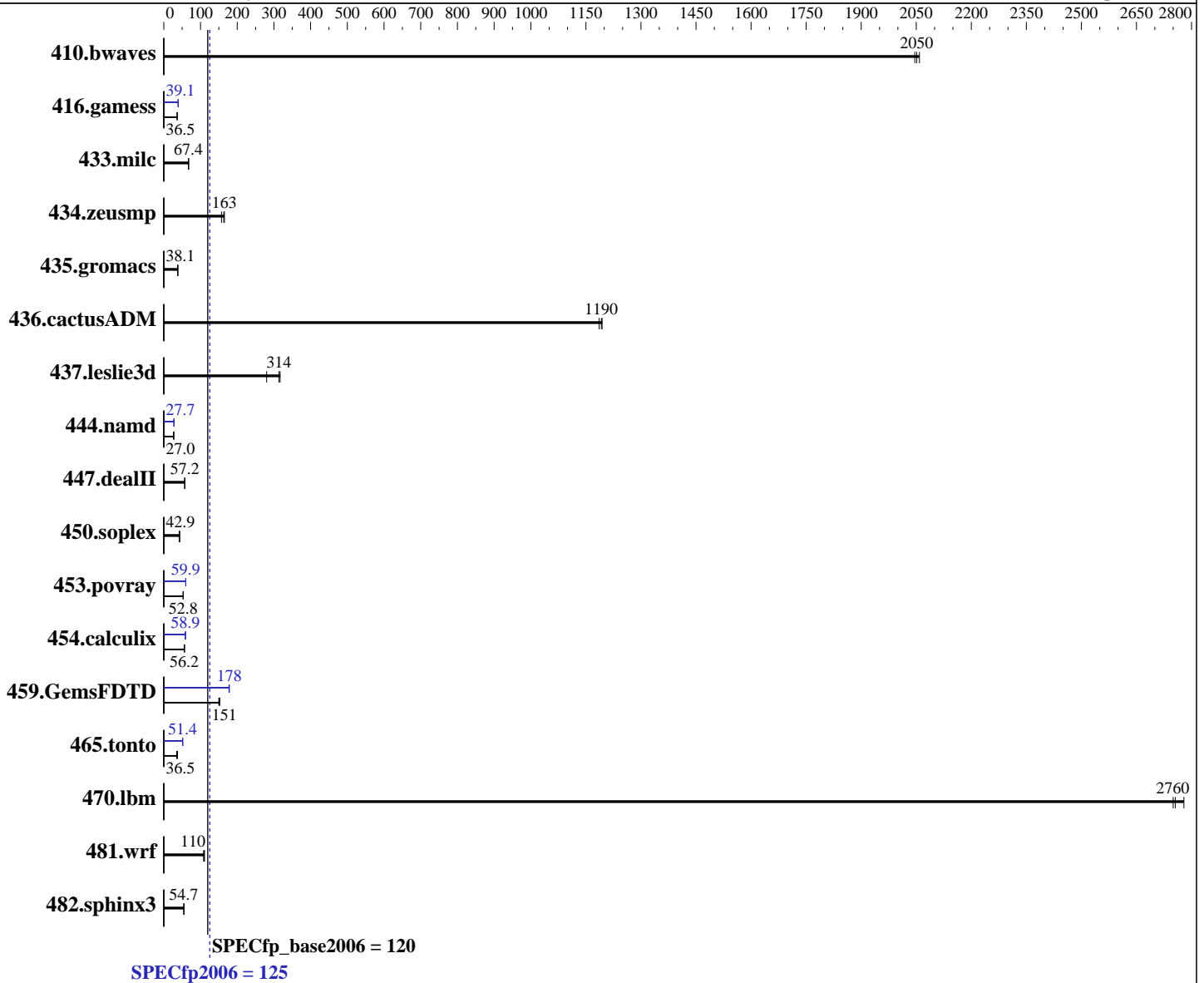
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Aug-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017



Hardware

CPU Name: Intel Xeon Platinum 8153
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 64 cores, 4 chips, 16 cores/chip
 CPU(s) orderable: 2,4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core

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Software

Operating System: SUSE Linux Enterprise Server 12 SP2 (x86_64)
 4.4.21-69-default
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++
 Compiler for Linux;
 Fortran: Version 17.0.3.191 of Intel Fortran
 Compiler for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 3 (multi-user)

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L3 Cache: 22 MB I+D on chip per chip
Other Cache: None
Memory: 768 GB (48 x 16 GB 2Rx4 PC4-2666V-R)
Disk Subsystem: 1 x 400 GB SAS SSD
Other Hardware: None

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	6.64	2050	6.60	2060	<u>6.63</u>	<u>2050</u>	6.64	2050	6.60	2060	<u>6.63</u>	<u>2050</u>
416.gamess	<u>537</u>	<u>36.5</u>	537	36.4	537	36.5	<u>500</u>	<u>39.1</u>	500	39.2	501	39.1
433.milc	<u>136</u>	<u>67.4</u>	136	67.5	136	67.3	<u>136</u>	<u>67.4</u>	136	67.5	136	67.3
434.zeusmp	<u>55.7</u>	<u>163</u>	57.9	157	55.1	165	<u>55.7</u>	<u>163</u>	57.9	157	55.1	165
435.gromacs	<u>187</u>	<u>38.1</u>	188	38.0	187	38.1	<u>187</u>	<u>38.1</u>	188	38.0	187	38.1
436.cactusADM	10.1	1190	<u>10.0</u>	<u>1190</u>	10.0	1190	10.1	1190	<u>10.0</u>	<u>1190</u>	10.0	1190
437.leslie3d	<u>30.0</u>	<u>314</u>	29.7	317	33.5	280	<u>30.0</u>	<u>314</u>	29.7	317	33.5	280
444.namd	<u>297</u>	<u>27.0</u>	297	27.0	297	27.0	290	27.7	<u>290</u>	<u>27.7</u>	290	27.7
447.dealII	201	57.1	<u>200</u>	<u>57.2</u>	200	57.2	201	57.1	<u>200</u>	<u>57.2</u>	200	57.2
450.soplex	194	43.0	195	42.7	<u>195</u>	<u>42.9</u>	194	43.0	195	42.7	<u>195</u>	<u>42.9</u>
453.povray	<u>101</u>	<u>52.8</u>	101	52.8	101	52.9	89.0	59.8	<u>88.8</u>	<u>59.9</u>	88.8	59.9
454.calculix	147	56.1	<u>147</u>	<u>56.2</u>	147	56.2	140	59.0	<u>140</u>	<u>58.9</u>	140	58.8
459.GemsFDTD	<u>70.1</u>	<u>151</u>	69.6	153	70.8	150	<u>59.5</u>	<u>178</u>	59.4	179	59.8	178
465.tonto	<u>270</u>	<u>36.5</u>	264	37.3	281	35.1	192	51.4	191	51.5	<u>191</u>	<u>51.4</u>
470.lbm	4.94	2780	<u>4.99</u>	<u>2760</u>	5.00	2750	4.94	2780	<u>4.99</u>	<u>2760</u>	5.00	2750
481.wrf	101	111	103	108	<u>101</u>	<u>110</u>	101	111	103	108	<u>101</u>	<u>110</u>
482.sphinx3	<u>356</u>	<u>54.7</u>	356	54.7	356	54.8	<u>356</u>	<u>54.7</u>	356	54.7	356	54.8

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 Settings:
Intel HyperThreading Technology set to Disabled
CPU performance set to Enterprise
Power Performance Tuning set to OS
SNC set to Disabled
IMC Interleaving set to Auto
Patrol Scrub set to Disabled
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-wjnw Sat Aug 12 20:08:43 2017

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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) Platinum 8153 CPU @ 2.00GHz
 4 "physical id"s (chips)
 64 "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      : 16
  siblings       : 16
  physical 0:    : cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 1:    : cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 2:    : cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 3:    : cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size      : 22528 KB

```

From /proc/meminfo

```

MemTotal:      791191512 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

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

```

SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# This file is deprecated and will be removed in a future service pack or
release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12-SP2"
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"

```

uname -a:

```

Linux linux-wjnw 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
(9464f67) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Aug 12 19:53

SPEC is set to: /opt/cpu2006-1.2

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdy2       xfs   321G  73G  249G  23% /

```

Additional information from dmidecode:

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Platform Notes (Continued)

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Cisco Systems, Inc. C480M5.3.1.0.272.0613172154 06/13/2017

Memory:
48x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/lib/ia32:/opt/cpu2006-1.2/lib/intel64:/opt/cpu2006-1.2/sh10.2"
OMP_NUM_THREADS = "64"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

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

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

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Base Portability Flags (Continued)

```

437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.deall: -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:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
```

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
```

Fortran benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
```

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



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Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll2 -inline-level=0
-qopt-prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -inline-calloc -qopt-malloc-options=3
-auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

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Peak Optimization Flags (Continued)

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

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-ic17.0-official-linux64-revF.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml>

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

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For other inquiries, please contact webmaster@spec.org.

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