SPEC® CFP2006 Result

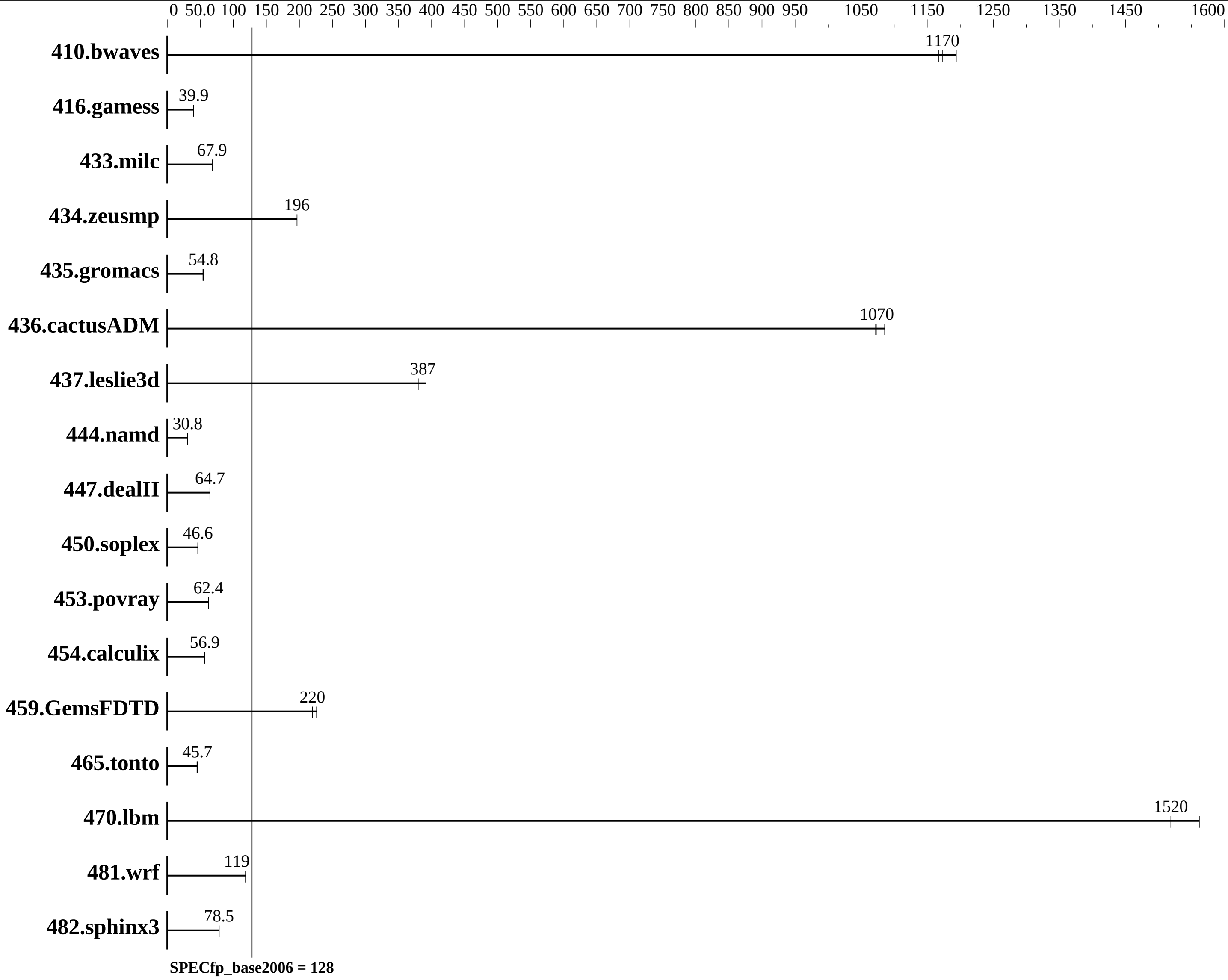
Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8891 v4, 2.80 GHz)

SPECfp®2006 = Not Run

SPECfp_base2006 = 128

CPU2006 license:	9019	**Test date:**	May-2016
Test sponsor:	Cisco Systems	**Hardware Availability:**	Jul-2016
Tested by:	Cisco Systems	**Software Availability:**	Dec-2015



Hardware

CPU Name:	Intel Xeon E7-8891 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	40 cores, 4 chips, 10 cores/chip
CPU(s) orderable:	2,4 chips
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:	SUSE Linux Enterprise Server 12 SP1 (x86_64) 3.12.49-11-default
Compiler:	C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	xfs
System State:	Run level 3 (multi-user)

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L3 Cache: 60 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2400T-R, running at 1600 MHz)
Disk Subsystem: 1 X 400 GB SAS SSD, 6 Gb/s
Other Hardware: None

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	**11.6**	**1170**	11.6	1170	11.4	1190						
416.gamess	490	40.0	**490**	**39.9**	491	39.9						
433.milc	135	68.0	**135**	**67.9**	135	67.9						
434.zeusmp	46.3	196	**46.4**	**196**	46.7	195						
435.gromacs	132	54.0	130	54.9	**130**	**54.8**						
436.cactusADM	11.2	1070	11.0	1090	**11.1**	**1070**						
437.leslie3d	24.7	381	**24.3**	**387**	24.0	392						
444.namd	261	30.8	**261**	**30.8**	261	30.8						
447.dealII	177	64.5	**177**	**64.7**	177	64.7						
450.soplex	179	46.6	**179**	**46.6**	181	46.2						
453.povray	**85.2**	**62.4**	85.6	62.1	85.1	62.5						
454.calculix	145	57.0	**145**	**56.9**	145	56.8						
459.GemsFDTD	51.0	208	47.0	226	**48.3**	**220**						
465.tonto	214	46.1	**215**	**45.7**	219	45.0						
470.lbm	**9.05**	**1520**	9.32	1480	8.80	1560						
481.wrf	**93.9**	**119**	93.8	119	94.8	118						
482.sphinx3	**248**	**78.5**	249	78.2	248	78.7						

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

```
BIOS Settings:
Intel Hyper-Threading Technology option set to Disabled
CPU performance set to Enterprise
Power Technology set to Energy Efficient
Energy Performance BIAS setting set to Balanced Performance
Memory RAS configuration set to Maximum Performance
Memory Power Saving Mode set to Disabled
QPI Snoop Mode set to Home Directory Snoop with OSB
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6914
```

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Test date: May-2016
Hardware Availability: Jul-2016
Software Availability: Dec-2015

Platform Notes (Continued)

```
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-6eaq Tue May 10 16:20:36 2016

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 E7-8891 v4 @ 2.80GHz
      4 "physical id"s (chips)
      40 "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 : 10
      siblings  : 10
      physical 0: cores 5 9 10 11 13 18 24 26 28 29
      physical 1: cores 5 9 10 11 13 18 24 26 28 29
      physical 2: cores 5 9 10 11 13 18 24 26 28 29
      physical 3: cores 5 9 10 11 13 18 24 26 28 29
   cache size : 61440 KB

From /proc/meminfo
   MemTotal:       529303792 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 1
      # 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-SP1"
      VERSION_ID="12.1"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
   Linux linux-6eaq 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
   (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 10 11:18

SPEC is set to: /opt/cpu2006-1.2
   Filesystem     Type  Size  Used Avail Use% Mounted on
```

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Platform Notes (Continued)

```
    /dev/sda1      xfs    372G   15G  358G   4% /
 Additional information from dmidecode:

    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. C460M4.2.0.11.36.042520161128 04/25/2016
   Memory:
    32x 0xCE00 M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 1600 MHz
    64x NO DIMM NO DIMM

 (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/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"
OMP_NUM_THREADS = "40"

 Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
 memory using RedHat EL 7.1
```

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

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Base Portability Flags (Continued)

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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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