SPEC® CFP2006 Result
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Cisco Systems

Cisco UCS B200 M3 (Intel Xeon E5-2630 v2, 2.60 GHz)

$SPECfp^{®}2006 =$ 82.9
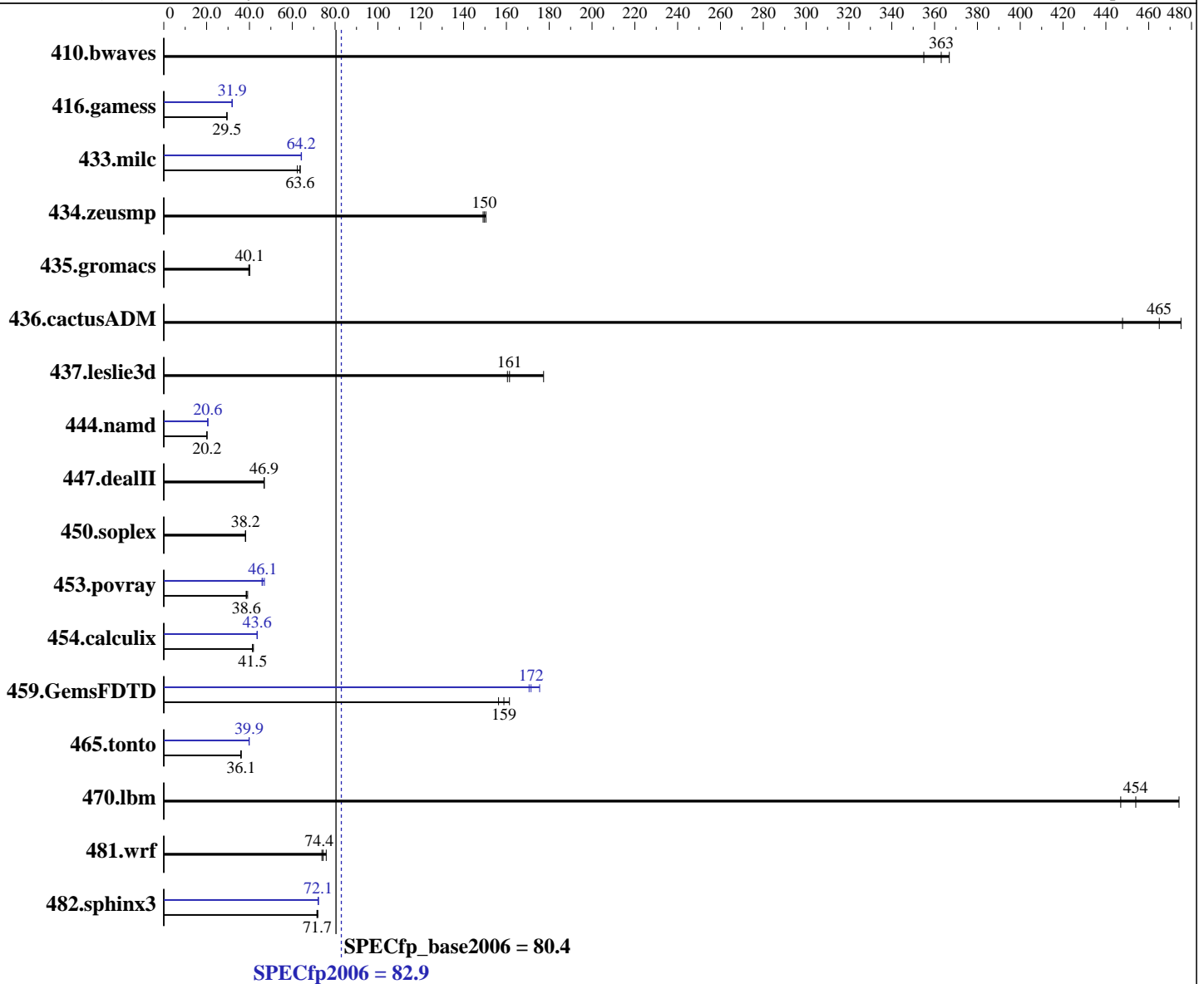
$SPECfp\_base2006 =$ 80.4

CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Test date: Nov-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013

Benchmark	Result
410.bwaves	363
416.gamess	31.9 / 29.5
433.milc	64.2 / 63.6
434.zeusmp	150
435.gromacs	40.1
436.cactusADM	465
437.leslie3d	161
444.namd	20.6 / 20.2
447.dealII	46.9
450.soplex	38.2
453.povray	46.1 / 38.6
454.calculix	43.6 / 41.5
459.GemsFDTD	172 / 159
465.tonto	39.9 / 36.1
470.lbm	454
481.wrf	74.4
482.sphinx3	72.1 / 71.7

SPECfp_base2006 = 80.4
SPECfp2006 = 82.9

Hardware

CPU Name: Intel Xeon E5-2630 v2
CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz: 2600
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 6.4 (Santiago)
2.6.32-358.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:	15 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz and CL11)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 X 600 GB 10000 RPM SAS		
Other Hardware:	None		

Results Table

	Base						Peak					
Benchmark	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**37.4**	**363**	37.0	367	38.3	355	**37.4**	**363**	37.0	367	38.3	355
416.gamess	664	29.5	664	29.5	**664**	**29.5**	613	32.0	**613**	**31.9**	614	31.9
433.milc	144	63.7	147	62.4	**144**	**63.6**	143	64.2	**143**	**64.2**	143	64.3
434.zeusmp	**60.8**	**150**	60.5	150	61.0	149	**60.8**	**150**	60.5	150	61.0	149
435.gromacs	**178**	**40.1**	180	39.7	178	40.1	**178**	**40.1**	180	39.7	178	40.1
436.cactusADM	**25.7**	**465**	25.2	475	26.7	448	**25.7**	**465**	25.2	475	26.7	448
437.leslie3d	**58.2**	**161**	53.0	177	58.6	160	**58.2**	**161**	53.0	177	58.6	160
444.namd	398	20.2	**398**	**20.2**	398	20.1	**390**	**20.6**	390	20.6	390	20.5
447.dealII	244	46.9	**244**	**46.9**	244	46.9	244	46.9	**244**	**46.9**	244	46.9
450.soplex	218	38.2	219	38.2	**219**	**38.2**	218	38.2	219	38.2	**219**	**38.2**
453.povray	138	38.5	136	39.2	**138**	**38.6**	116	45.9	**115**	**46.1**	113	47.0
454.calculix	**199**	**41.5**	197	41.9	199	41.4	189	43.6	189	43.6	**189**	**43.6**
459.GemsFDTD	**66.8**	**159**	65.7	161	67.9	156	62.2	171	**61.9**	**172**	60.4	176
465.tonto	**273**	**36.1**	274	35.9	272	36.2	**247**	**39.9**	247	39.9	247	39.8
470.lbm	29.0	474	**30.3**	**454**	30.7	447	29.0	474	**30.3**	**454**	30.7	447
481.wrf	151	73.8	**150**	**74.4**	147	75.9	151	73.8	**150**	**74.4**	147	75.9
482.sphinx3	273	71.5	271	72.0	**272**	**71.7**	270	72.3	271	72.0	**270**	**72.1**

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 HT Technology = Disabled
    CPU performance set to HPC
    Power Technology set to Custom
    CPU Power State C6 set to Enabled
    CPU Power State C1 Enhanced set to Disabled
    Energy Performance policy set to Performance
    Memory RAS configuration set to Maximum Performance
    DRAM Clock Throttling Set to Performance

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Platform Notes (Continued)

```
LV DDR Mode set to Performance-mode
DRAM Refresh Rate Set to 1x
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on localhost.localdomain Sat Nov 16 20:42:19 2013

 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 E5-2630 v2 @ 2.60GHz
       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:       132089864 kB
    HugePages_Total:        0
    Hugepagesize:       2048 kB

 /usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.4 (Santiago)

 From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
    Linux localhost.localdomain 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41
    EST 2013 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Nov 16 20:41

 SPEC is set to: /opt/cpu2006-1.2
    Filesystem     Type     Size  Used Avail Use% Mounted on
    /dev/sda1      ext4     550G   34G  488G   7% /

 Additional information from dmidecode:
   BIOS Cisco Systems, Inc. B200M3.2.1.3a.0.082320131800 08/23/2013
   Memory:
   16x 0xAD00 HMT31GR7EFR4C-RD 8 GB 1600 MHz 2 rank
   8x NO DIMM NO DIMM
```

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Platform Notes (Continued)

```
(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"
OMP_NUM_THREADS = "12"

 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>
```

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
```

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Base Portability Flags (Continued)

```
    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
```

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
```

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Peak Optimization Flags (Continued)

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

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: 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

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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-V1.2.20130717.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-V1.2.20130717.xml

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

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