



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8158, 3.00GHz)

**SPECfp<sup>®</sup>\_rate2006 = 1250**

**SPECfp\_rate\_base2006 = 1230**

CPU2006 license: 9019

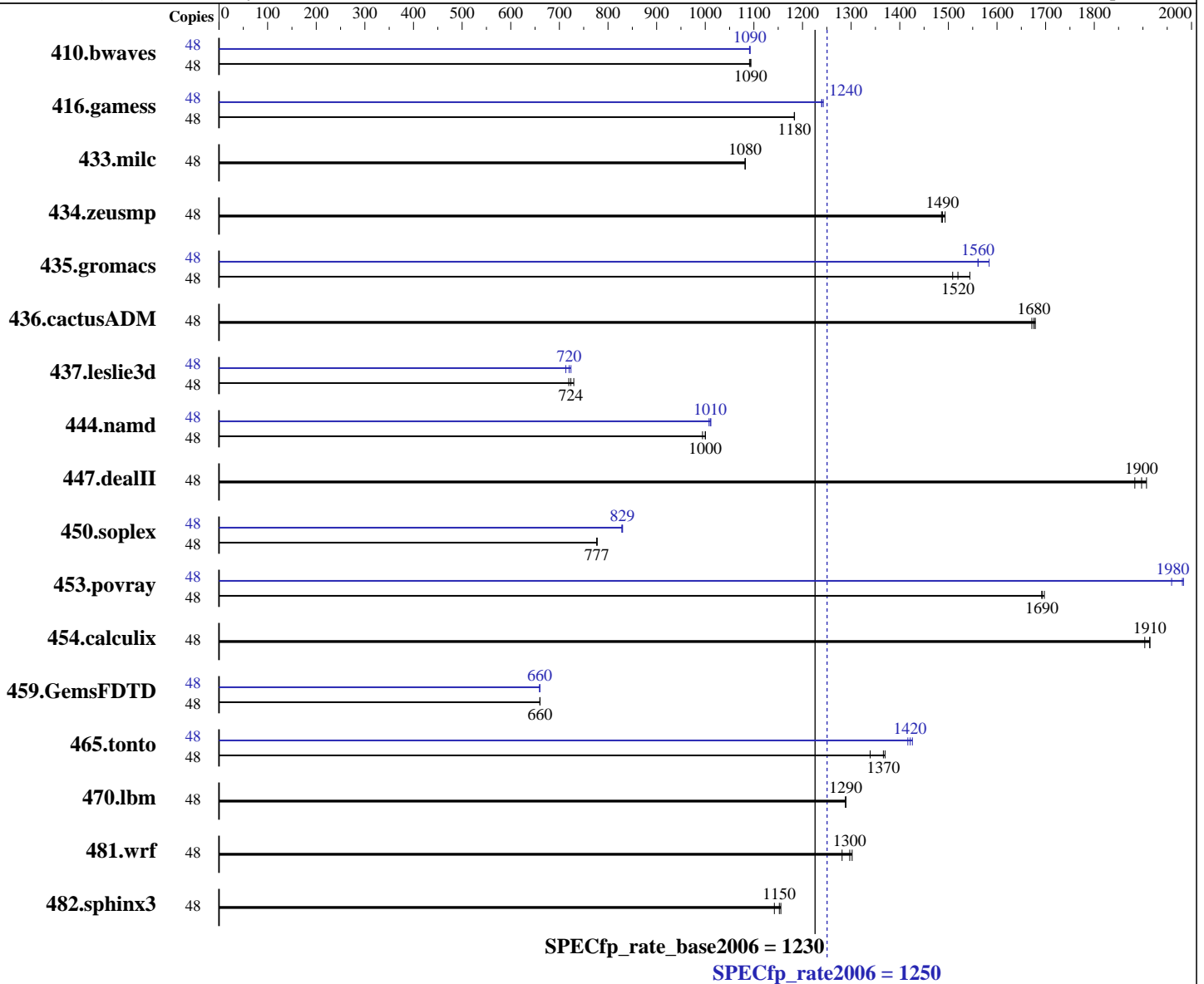
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2017

Hardware Availability: Aug-2017

Software Availability: Sep-2017



### Hardware

CPU Name: Intel Xeon Platinum 8158  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 12 SP2 (x86\_64) 4.4.21-69-default  
 Compiler: C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux;  
 Fortran: Version 18.0.0.128 of Intel Fortran Compiler for Linux  
 Auto Parallel: Yes  
 File System: xfs  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp\_rate2006 = 1250

SPECfp\_rate\_base2006 = 1230

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2017

Hardware Availability: Aug-2017

Software Availability: Sep-2017

L3 Cache: 24.75 MB I+D on chip per chip  
Other Cache: None  
Memory: 384 GB (24 x 16 GB 2Rx4 PC4-2666V-R)  
Disk Subsystem: 1 x 1 TB SAS HDD, 7.2K RPM  
Other Hardware: None

Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	48	596	1090	<b><u>597</u></b>	<b><u>1090</u></b>	598	1090	48	<b><u>598</u></b>	<b><u>1090</u></b>	597	1090	598	1090
416.gamess	48	794	1180	794	1180	<b><u>794</u></b>	<b><u>1180</u></b>	48	<b><u>758</u></b>	<b><u>1240</u></b>	756	1240	758	1240
433.milc	48	407	1080	407	1080	<b><u>407</u></b>	<b><u>1080</u></b>	48	407	1080	407	1080	<b><u>407</u></b>	<b><u>1080</u></b>
434.zeusmp	48	293	1490	<b><u>294</u></b>	<b><u>1490</u></b>	294	1490	48	293	1490	<b><u>294</u></b>	<b><u>1490</u></b>	294	1490
435.gromacs	48	222	1540	227	1510	<b><u>226</u></b>	<b><u>1520</u></b>	48	216	1580	220	1560	<b><u>220</u></b>	<b><u>1560</u></b>
436.cactusADM	48	342	1680	<b><u>342</u></b>	<b><u>1680</u></b>	343	1670	48	342	1680	<b><u>342</u></b>	<b><u>1680</u></b>	343	1670
437.leslie3d	48	<b><u>624</u></b>	<b><u>724</u></b>	618	730	627	719	48	623	724	633	713	<b><u>627</u></b>	<b><u>720</u></b>
444.namd	48	387	994	<b><u>385</u></b>	<b><u>1000</u></b>	385	1000	48	381	1010	382	1010	<b><u>381</u></b>	<b><u>1010</u></b>
447.dealII	48	<b><u>289</u></b>	<b><u>1900</u></b>	288	1910	292	1880	48	<b><u>289</u></b>	<b><u>1900</u></b>	288	1910	292	1880
450.soplex	48	<b><u>515</u></b>	<b><u>777</u></b>	515	778	515	777	48	482	830	483	828	<b><u>483</u></b>	<b><u>829</u></b>
453.povray	48	151	1690	150	1700	<b><u>151</u></b>	<b><u>1690</u></b>	48	<b><u>129</u></b>	<b><u>1980</u></b>	130	1960	129	1980
454.calculix	48	<b><u>207</u></b>	<b><u>1910</u></b>	207	1910	208	1900	48	<b><u>207</u></b>	<b><u>1910</u></b>	207	1910	208	1900
459.GemsFDTD	48	772	660	<b><u>772</u></b>	<b><u>660</u></b>	771	660	48	<b><u>772</u></b>	<b><u>660</u></b>	772	659	772	660
465.tonto	48	345	1370	353	1340	<b><u>346</u></b>	<b><u>1370</u></b>	48	331	1430	333	1420	<b><u>332</u></b>	<b><u>1420</u></b>
470.lbm	48	512	1290	512	1290	<b><u>512</u></b>	<b><u>1290</u></b>	48	512	1290	512	1290	<b><u>512</u></b>	<b><u>1290</u></b>
481.wrf	48	<b><u>413</u></b>	<b><u>1300</u></b>	418	1280	412	1300	48	<b><u>413</u></b>	<b><u>1300</u></b>	418	1280	412	1300
482.sphinx3	48	<b><u>812</u></b>	<b><u>1150</u></b>	810	1160	819	1140	48	<b><u>812</u></b>	<b><u>1150</u></b>	810	1160	819	1140

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS Settings:  
Intel HyperThreading Technology set to Enabled  
CPU performance set to Enterprise

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp\_rate2006 = 1250

SPECfp\_rate\_base2006 = 1230

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2017

Hardware Availability: Aug-2017

Software Availability: Sep-2017

### Platform Notes (Continued)

Power Performance Tuning set to OS

SNC set to Enabled

IMC Interleaving set to 1-way Interleave

Patrol Scrub set to Disabled

Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6993

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)

running on linux-uezu Thu Oct 12 20:00:52 2017

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 8158 CPU @ 3.00GHz

2 "physical id"s (chips)

48 "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 : 12

siblings : 24

physical 0: cores 0 1 2 3 4 9 10 16 18 19 25 26

physical 1: cores 0 1 3 9 10 16 18 19 24 25 26 27

cache size : 25344 KB

From /proc/meminfo

MemTotal: 394831816 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-uezu 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 Jan 8 17:00

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp\_rate2006 = 1250

SPECfp\_rate\_base2006 = 1230

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

**Test date:** Oct-2017  
**Hardware Availability:** Aug-2017  
**Software Availability:** Sep-2017

### Platform Notes (Continued)

SPEC is set to: /opt/cpu2006-1.2  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sdal xfs 894G 98G 797G 11% /  
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. B200M5.3.2.1d.5.0727171353 07/27/2017  
Memory:  
24x 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:

LD\_LIBRARY\_PATH = \*/opt/intel/compilers\_and\_libraries\_2018.0.128/linux/compiler/lib/ia32:/opt/intel/compilers\_and\_libraries\_2018.0.128/linux/compiler/lib/intel64:/opt/cpu2006-1.2/sh10.2\*

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  
Filesystem page cache cleared with:  
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop\_caches' prior to run  
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



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp\_rate2006 = 1250

SPECfp\_rate\_base2006 = 1230

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2017

Hardware Availability: Aug-2017

Software Availability: Sep-2017

## 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:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

```

C++ benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

```

Fortran benchmarks:

```

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

```

Benchmarks using both Fortran and C:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

```

## Peak Compiler Invocation

C benchmarks:

```
icc -m64
```

C++ benchmarks (except as noted below):

```
icpc -m64
```

```
450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp\_rate2006 = 1250

SPECfp\_rate\_base2006 = 1230

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2017

Hardware Availability: Aug-2017

Software Availability: Sep-2017

## Peak Compiler Invocation (Continued)

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak 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: -D\_FILE\_OFFSET\_BITS=64  
 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

## 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  
 -qopt-mem-layout-trans=3

447.dealII: basepeak = yes

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp\_rate2006 = 1250

SPECfp\_rate\_base2006 = 1230

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2017

Hardware Availability: Aug-2017

Software Availability: Sep-2017

## Peak Optimization Flags (Continued)

450.soplex: -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) -qopt-malloc-options=3  
-qopt-mem-layout-trans=3

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 -qopt-mem-layout-trans=3

Fortran benchmarks:

410.bwaves: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

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: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

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) -unroll4 -auto -inline-calloc  
-qopt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -qopt-prefetch -auto-ilp32  
-qopt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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-ic18.0-official-linux64.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-ic18.0-official-linux64.xml>

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



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8158, 3.00GHz)

SPECfp\_rate2006 = 1250

SPECfp\_rate\_base2006 = 1230

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Oct-2017

**Hardware Availability:** Aug-2017

**Software Availability:** Sep-2017

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Wed Nov 1 00:54:50 2017 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 31 October 2017.