



SPEC[®] CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp[®]_rate2006 = 588

Lenovo System x3550 M5
(Intel Xeon E5-2643 v3, 3.40 GHz)

SPECfp_rate_base2006 = 572

CPU2006 license: 9017

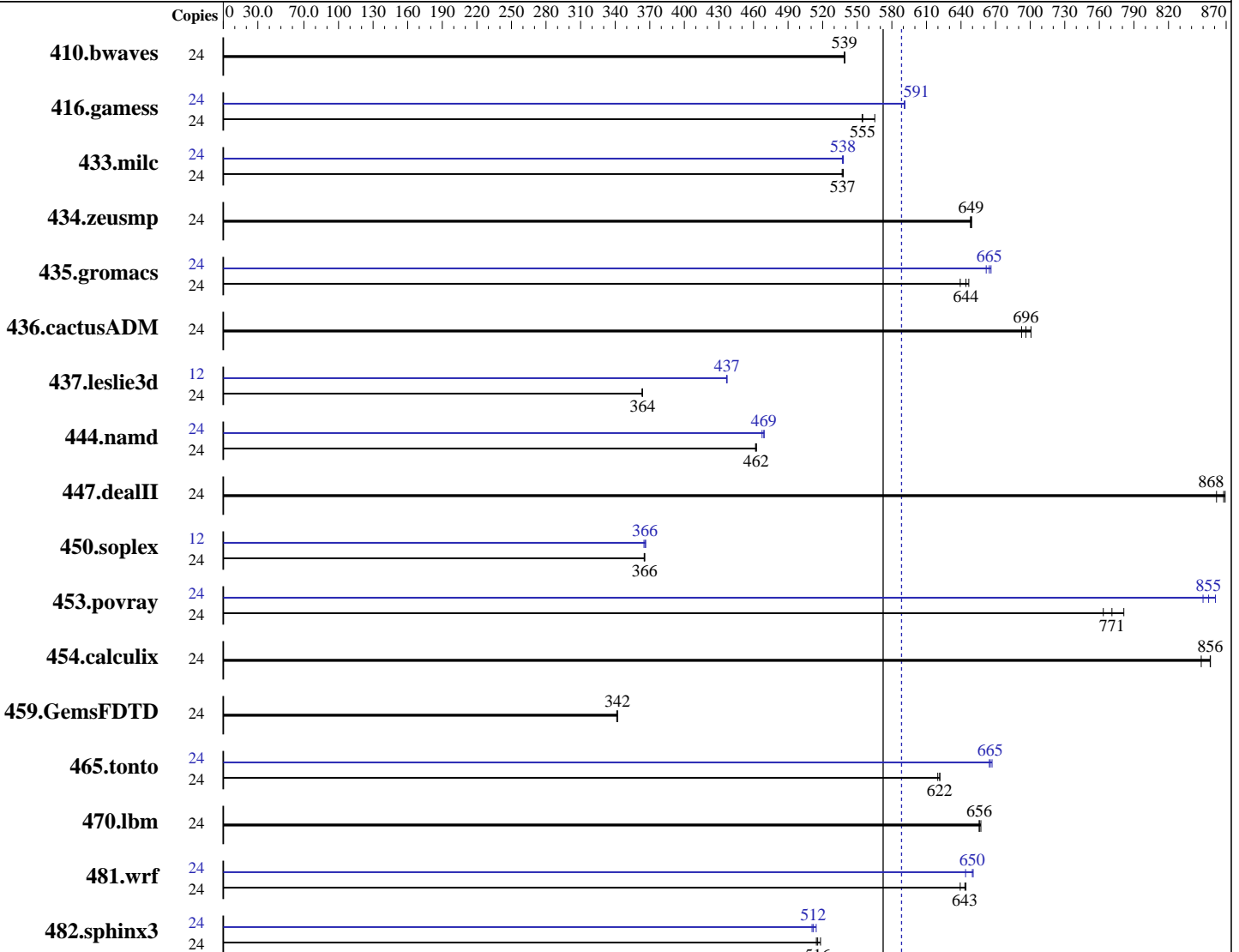
Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Jan-2015

Hardware Availability: Oct-2014

Software Availability: Sep-2014



SPECfp_rate_base2006 = 572

SPECfp_rate2006 = 588

Hardware

CPU Name: Intel Xeon E5-2643 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 3400
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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: 256 KB I+D on chip per core

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
 3.10.0-123.el7.x86_64
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: xfs

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 588

Lenovo System x3550 M5
(Intel Xeon E5-2643 v3, 3.40 GHz)

SPECfp_rate_base2006 = 572

CPU2006 license: 9017

Test date: Jan-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Oct-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 300 GB SAS
Other Hardware: None

System State: Run level 3 (multi-user)
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	24	605	539	605	539	605	539	24	605	539	605	539	605	539		
416.gamess	24	847	555	848	554	831	565	24	795	591	795	591	795	591		
433.milc	24	410	538	410	537	410	537	24	410	538	410	538	410	537		
434.zeusmp	24	336	649	337	649	337	648	24	336	649	337	649	337	648		
435.gromacs	24	265	647	268	639	266	644	24	258	665	257	666	259	662		
436.cactusADM	24	414	693	409	701	412	696	24	414	693	409	701	412	696		
437.leslie3d	24	620	364	620	364	621	363	12	258	437	258	437	258	437		
444.namd	24	417	462	416	463	417	462	24	410	469	410	469	412	467		
447.dealII	24	316	868	319	862	316	869	24	316	868	319	862	316	869		
450.soplex	24	548	366	547	366	548	365	12	273	367	274	366	274	365		
453.povray	24	166	771	163	781	167	763	24	150	850	148	861	149	855		
454.calculix	24	233	848	231	856	231	856	24	233	848	231	856	231	856		
459.GemsFDTD	24	746	341	745	342	745	342	24	746	341	745	342	745	342		
465.tonto	24	381	620	380	622	380	622	24	355	665	354	667	355	665		
470.lbm	24	503	656	503	656	502	657	24	503	656	503	656	502	657		
481.wrf	24	419	639	417	643	416	644	24	416	644	412	651	413	650		
482.sphinx3	24	909	515	903	518	907	516	24	914	512	909	514	916	511		

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 setting:
Operating Mode set to "Efficiency-Favor Performance"
Sysinfo program /SPECcpu/config/sysinfo.rev6914

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 588

Lenovo System x3550 M5
(Intel Xeon E5-2643 v3, 3.40 GHz)

SPECfp_rate_base2006 = 572

CPU2006 license: 9017

Test date: Jan-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Oct-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

Platform Notes (Continued)

\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on x3550M5 Tue Jan 27 23:40:07 2015

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 E5-2643 v3 @ 3.40GHz
 2 "physical id"s (chips)
 24 "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  : 12
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
 cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal:      263584864 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

```
uname -a:
Linux x3550M5 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64
x86_64 x86_64 GNU/Linux
```

```
SPEC is set to: /SPECcpu
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2       xfs       239G      37G  202G  16% /
```

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 588

Lenovo System x3550 M5
(Intel Xeon E5-2643 v3, 3.40 GHz)

SPECfp_rate_base2006 = 572

CPU2006 license: 9017

Test date: Jan-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Oct-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

Platform Notes (Continued)

hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS IBM -[TBE103AUS-1.01]- 10/23/2014

Memory:

12x Hynix 484D4134324752374D4652344E2D54462020 16 GB 2 rank 2133 MHz

4x Hynix 484D4134324752374D4652344E2D54465431 16 GB 2 rank 2133 MHz

8x NO DIMM Unknown

(End of data from sysinfo program)

General Notes

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

LD_LIBRARY_PATH = "/SPECcpu/libs/32:/SPECcpu/libs/64:/SPECcpu/sh"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent_hugepage/enabled

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop_caches

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 588

Lenovo System x3550 M5
(Intel Xeon E5-2643 v3, 3.40 GHz)

SPECfp_rate_base2006 = 572

CPU2006 license: 9017

Test date: Jan-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Oct-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

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 -opt-prefetch -auto-p32
-ansi-alias

```

C++ benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias

```

Fortran benchmarks:

```

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

```

Benchmarks using both Fortran and C:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias

```

Peak Compiler Invocation

C benchmarks:

```

icc -m64

```

C++ benchmarks (except as noted below):

```

icpc -m64

```

```

450.soplex: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

```

Fortran benchmarks:

```

ifort -m64

```

Benchmarks using both Fortran and C:

```

icc -m64 ifort -m64

```



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 588

Lenovo System x3550 M5
(Intel Xeon E5-2643 v3, 3.40 GHz)

SPECfp_rate_base2006 = 572

CPU2006 license: 9017

Test date: Jan-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Oct-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

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
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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
         -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
         -auto-ilp32

```

```

470.lbm: basepeak = yes

```

```

482.sphinx3: -xCORE-AVX2 -prof-gen(pass 1) -ipo -O3 -no-prec-div
             -prof-use(pass 2) -unroll2

```

C++ benchmarks:

```

444.namd: -xCORE-AVX2(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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
           -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
           -opt-malloc-options=3

```

```

453.povray: -xCORE-AVX2(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:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 588

Lenovo System x3550 M5
(Intel Xeon E5-2643 v3, 3.40 GHz)

SPECfp_rate_base2006 = 572

CPU2006 license: 9017

Test date: Jan-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Oct-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

Peak Optimization Flags (Continued)

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

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

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-HSW-B.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-HSW-B.xml>

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.

Tested with SPEC CPU2006 v1.2.

Report generated on Wed Feb 25 11:29:50 2015 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 24 February 2015.