



SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp®_rate2006 = 215

Lenovo System x3250 M6
(3.90 GHz, Intel Xeon E3-1280 v6)

SPECfp_rate_base2006 = 209

CPU2006 license: 9017

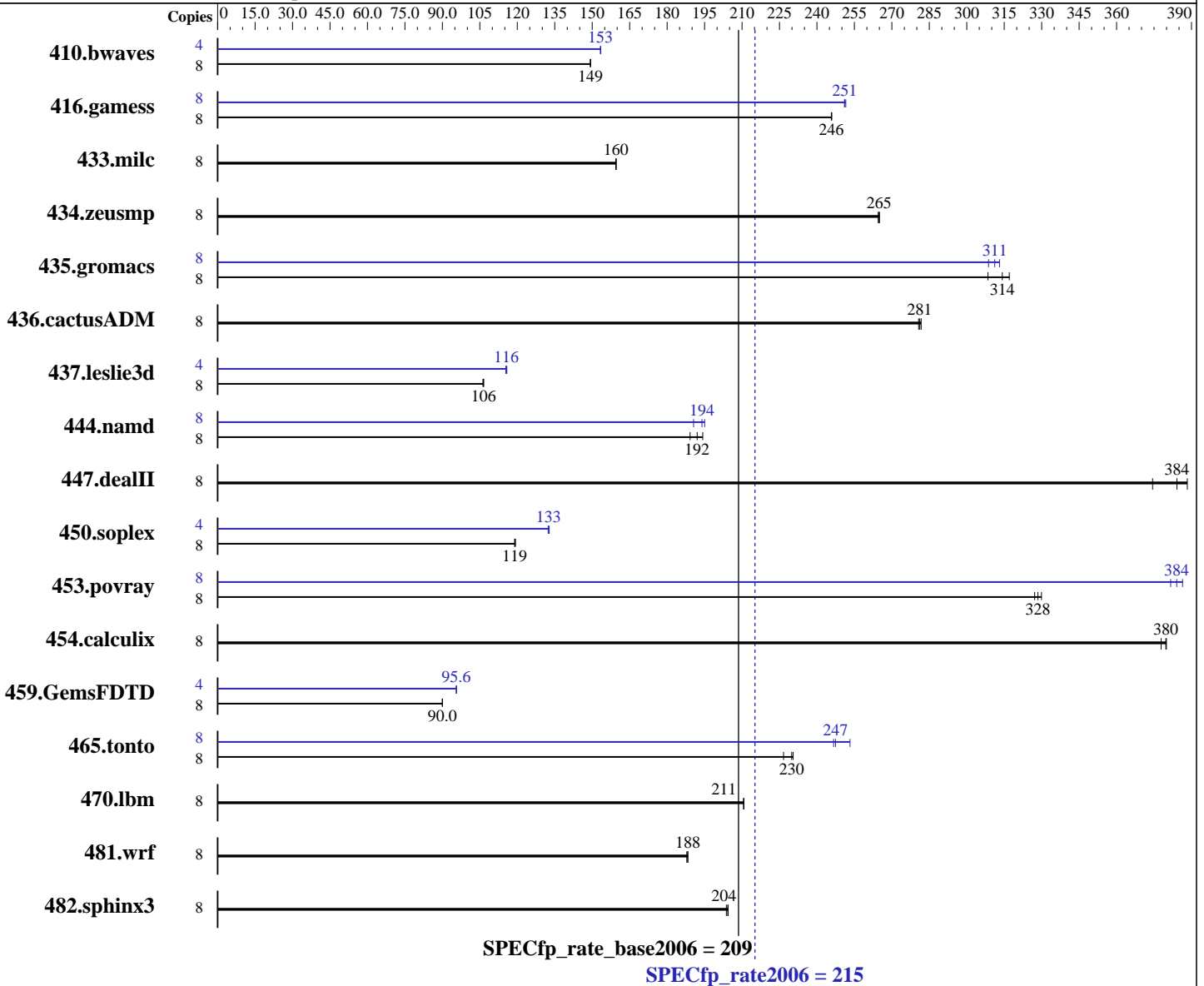
Test date: Mar-2017

Test sponsor: Lenovo Group Limited

Hardware Availability: Apr-2017

Tested by: Lenovo Group Limited

Software Availability: Nov-2016



Hardware

CPU Name: Intel Xeon E3-1280 v6
 CPU Characteristics: Intel Turbo Boost Technology up to 4.20 GHz
 CPU MHz: 3900
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 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: SUSE Linux Enterprise Server 12 SP2 (x86_64)
 Kernel 4.4.21-69-default
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux;
 Fortran: Version 17.0.0.098 of Intel Fortran Compiler for Linux
 Auto Parallel: No
 File System: xfs
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 215

Lenovo System x3250 M6
(3.90 GHz, Intel Xeon E3-1280 v6)

SPECfp_rate_base2006 = 209

CPU2006 license: 9017

Test date: Mar-2017

Test sponsor: Lenovo Group Limited

Hardware Availability: Apr-2017

Tested by: Lenovo Group Limited

Software Availability: Nov-2016

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2400T-U)
Disk Subsystem: 1 x 800 GB SATA SSD
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	8	728	149	<u>728</u>	<u>149</u>	728	149	4	355	153	354	153	<u>355</u>	<u>153</u>
416.gamess	8	<u>637</u>	<u>246</u>	637	246	637	246	8	624	251	<u>624</u>	<u>251</u>	623	252
433.milc	8	<u>460</u>	<u>160</u>	460	160	460	160	8	<u>460</u>	<u>160</u>	460	160	460	160
434.zeusmp	8	275	265	<u>275</u>	<u>265</u>	275	265	8	275	265	<u>275</u>	<u>265</u>	275	265
435.gromacs	8	185	308	180	317	<u>182</u>	<u>314</u>	8	185	309	<u>184</u>	<u>311</u>	182	313
436.cactusADM	8	339	282	341	281	<u>340</u>	<u>281</u>	8	339	282	341	281	<u>340</u>	<u>281</u>
437.leslie3d	8	706	107	<u>706</u>	<u>106</u>	708	106	4	326	115	<u>325</u>	<u>116</u>	325	116
444.namd	8	330	194	<u>334</u>	<u>192</u>	339	189	8	329	195	337	191	<u>331</u>	<u>194</u>
447.dealII	8	244	374	<u>238</u>	<u>384</u>	236	388	8	244	374	<u>238</u>	<u>384</u>	236	388
450.soplex	8	559	119	<u>561</u>	<u>119</u>	561	119	4	252	132	251	133	<u>252</u>	<u>133</u>
453.povray	8	130	327	<u>130</u>	<u>328</u>	129	330	8	110	386	<u>111</u>	<u>384</u>	112	382
454.calculix	8	174	380	<u>174</u>	<u>380</u>	175	378	8	174	380	<u>174</u>	<u>380</u>	175	378
459.GemsFDTD	8	<u>943</u>	<u>90.0</u>	943	90.0	943	90.0	4	444	95.6	444	95.6	<u>444</u>	<u>95.6</u>
465.tonto	8	<u>342</u>	<u>230</u>	347	227	342	230	8	<u>318</u>	<u>247</u>	311	253	319	247
470.lbm	8	522	211	522	211	<u>522</u>	<u>211</u>	8	522	211	522	211	<u>522</u>	<u>211</u>
481.wrf	8	<u>475</u>	<u>188</u>	475	188	476	188	8	<u>475</u>	<u>188</u>	475	188	476	188
482.sphinx3	8	<u>763</u>	<u>204</u>	765	204	763	204	8	<u>763</u>	<u>204</u>	765	204	763	204

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"
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



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 215

Lenovo System x3250 M6
(3.90 GHz, Intel Xeon E3-1280 v6)

SPECfp_rate_base2006 = 209

CPU2006 license: 9017

Test date: Mar-2017

Test sponsor: Lenovo Group Limited

Hardware Availability: Apr-2017

Tested by: Lenovo Group Limited

Software Availability: Nov-2016

Platform Notes

BIOS configuration:

Intel Virtualization Technology set to Disable

Operating Mode set to Maximum Performance

DCU Streamer Prefetcher set to Disable

Sysinfo program /home/cpu2006-1.2-ic17.0/config/sysinfo.rev6993

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)

running on linux-zyye Thu Mar 16 09:35:44 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) CPU E3-1280 v6 @ 3.90GHz

1 "physical id"s (chips)

8 "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 : 4

siblings : 8

physical 0: cores 0 1 2 3

cache size : 8192 KB

From /proc/meminfo

MemTotal: 65931684 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-zyye 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 Mar 16 02:18

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 215

Lenovo System x3250 M6
(3.90 GHz, Intel Xeon E3-1280 v6)

SPECfp_rate_base2006 = 209

CPU2006 license: 9017

Test date: Mar-2017

Test sponsor: Lenovo Group Limited

Hardware Availability: Apr-2017

Tested by: Lenovo Group Limited

Software Availability: Nov-2016

Platform Notes (Continued)

SPEC is set to: /home/cpu2006-1.2-ic17.0

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda4	xfs	689G	17G	673G	3%	/home

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 LENOVO -[M3E121PUS-2.00]- 03/14/2017

Memory:

4x Samsung M378A2K43BB1-CRC 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)

General Notes

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

LD_LIBRARY_PATH = "/home/cpu2006-1.2-ic17.0/libs/32:/home/cpu2006-1.2-ic17.0/libs/64:/home/cpu2006-1.2-ic17.0/sh10.2"

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 215

Lenovo System x3250 M6
(3.90 GHz, Intel Xeon E3-1280 v6)

SPECfp_rate_base2006 = 209

CPU2006 license: 9017

Test date: Mar-2017

Test sponsor: Lenovo Group Limited

Hardware Availability: Apr-2017

Tested by: Lenovo Group Limited

Software Availability: Nov-2016

Base Portability Flags (Continued)

```

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

```

Fortran benchmarks:

```

ifort -m64

```

Benchmarks using both Fortran and C:

```

icc -m64 ifort -m64

```



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 215

Lenovo System x3250 M6
(3.90 GHz, Intel Xeon E3-1280 v6)

SPECfp_rate_base2006 = 209

CPU2006 license: 9017

Test date: Mar-2017

Test sponsor: Lenovo Group Limited

Hardware Availability: Apr-2017

Tested by: Lenovo Group Limited

Software Availability: Nov-2016

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

```

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:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 215

Lenovo System x3250 M6
(3.90 GHz, Intel Xeon E3-1280 v6)

SPECfp_rate_base2006 = 209

CPU2006 license: 9017

Test date: Mar-2017

Test sponsor: Lenovo Group Limited

Hardware Availability: Apr-2017

Tested by: Lenovo Group Limited

Software Availability: Nov-2016

Peak Optimization Flags (Continued)

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-ic17.0-official-linux64.html>

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

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-BDW-D.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 Tue Apr 4 16:57:15 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 4 April 2017.