



SPEC[®] CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp[®]2006 = 107

Lenovo System x3500 M5
(Intel Xeon E5-2697 v3, 2.60 GHz)

SPECfp_base2006 = 102

CPU2006 license: 9017

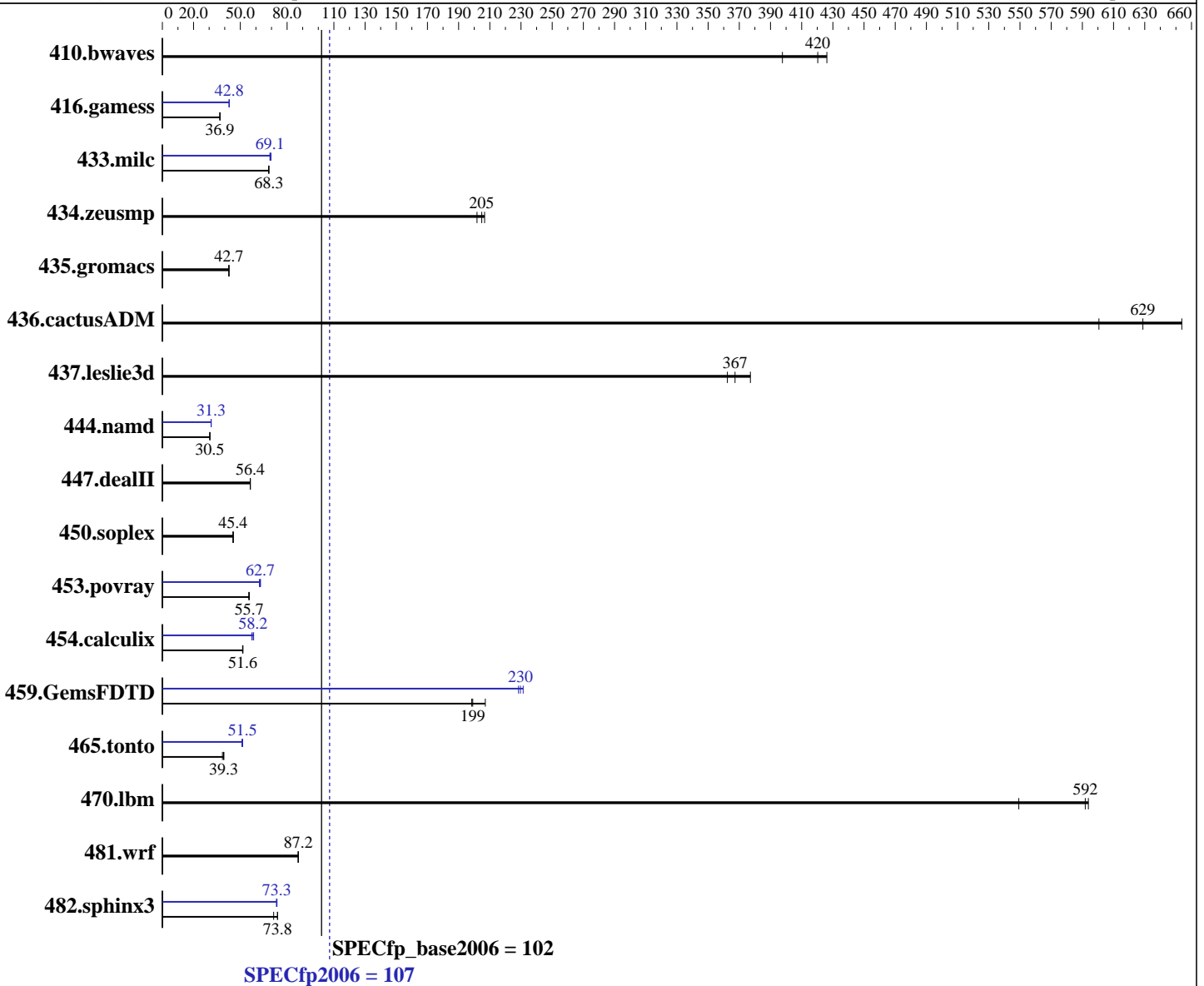
Test date: Sep-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Jan-2015

Tested by: Lenovo Group Limited

Software Availability: Sep-2014



Hardware	
CPU Name:	Intel Xeon E5-2697 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	28 cores, 2 chips, 14 cores/chip
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:	Yes
File System:	xfs

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp2006 = **107**

Lenovo System x3500 M5
(Intel Xeon E5-2697 v3, 2.60 GHz)

SPECfp_base2006 = **102**

CPU2006 license: 9017

Test date: Sep-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Jan-2015

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

L3 Cache: 35 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 960 GB SATA SSD
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>32.3</u>	420	34.2	398	31.9	426	<u>32.3</u>	420	34.2	398	31.9	426
416.gamess	532	36.8	531	36.9	528	37.1	<u>457</u>	42.8	457	42.8	457	42.9
433.milc	134	68.3	135	68.2	134	68.3	<u>133</u>	69.1	133	69.0	132	69.7
434.zeusmp	44.0	207	44.4	205	45.1	202	44.0	207	44.4	205	45.1	202
435.gromacs	168	42.6	167	42.8	167	42.7	168	42.6	167	42.8	167	42.7
436.cactusADM	18.3	654	19.0	629	19.9	601	18.3	654	19.0	629	19.9	601
437.leslie3d	25.9	362	24.9	377	25.6	367	25.9	362	24.9	377	25.6	367
444.namd	263	30.5	263	30.5	263	30.5	<u>256</u>	31.3	256	31.3	256	31.3
447.dealII	203	56.4	203	56.4	203	56.4	203	56.4	203	56.4	203	56.4
450.soplex	184	45.3	183	45.5	184	45.4	184	45.3	183	45.5	184	45.4
453.povray	95.5	55.7	95.5	55.7	96.0	55.4	85.5	62.2	84.5	63.0	84.8	62.7
454.calculix	160	51.4	160	51.6	160	51.7	<u>142</u>	58.2	141	58.5	144	57.3
459.GemsFDTD	53.3	199	51.2	207	53.5	198	45.9	231	46.5	228	46.2	230
465.tonto	251	39.3	249	39.5	255	38.5	193	51.0	191	51.5	191	51.5
470.lbm	25.0	549	23.1	594	23.2	592	25.0	549	23.1	594	23.2	592
481.wrf	128	87.0	128	87.2	128	87.2	128	87.0	128	87.2	128	87.2
482.sphinx3	273	71.4	264	73.8	264	73.9	<u>266</u>	73.3	266	73.2	265	73.5

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 setting:
Operating Mode set to "Efficiency-Favor Performance"
Hyper-threading set to "Disable"
Sysinfo program /home/SPEC/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on x3500M5 Thu Sep 3 18:58:40 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>

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp2006 = 107

Lenovo System x3500 M5
(Intel Xeon E5-2697 v3, 2.60 GHz)

SPECfp_base2006 = 102

CPU2006 license: 9017

Test date: Sep-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Jan-2015

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2697 v3 @ 2.60GHz
 2 "physical id"s (chips)
28 "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 : 14
  siblings  : 14
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
cache size : 35840 KB

```

```

From /proc/meminfo
MemTotal:      263456292 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 x3500M5 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: /home/SPEC
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-root xfs  927G  140G  787G  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 hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS IBM -[TAE105J-1.10]- 04/20/2015

```

Memory:
16x Hynix HMA42GR7MFR4N-TFT1 16 GB 2 rank 2133 MHz
8x NO DIMM Unknown

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp2006 = 107

Lenovo System x3500 M5
(Intel Xeon E5-2697 v3, 2.60 GHz)

SPECfp_base2006 = 102

CPU2006 license: 9017

Test date: Sep-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Jan-2015

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

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

KMP_AFFINITY = "granularity=fine,compact,1,0"

LD_LIBRARY_PATH = "/home/SPEC/libs/32:/home/SPEC/libs/64:/home/SPEC/sh"

OMP_NUM_THREADS = "28"

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

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.deallI: -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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp2006 = 107

Lenovo System x3500 M5
(Intel Xeon E5-2697 v3, 2.60 GHz)

SPECfp_base2006 = 102

CPU2006 license: 9017

Test date: Sep-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Jan-2015

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

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:

-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

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:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp2006 = 107

Lenovo System x3500 M5
(Intel Xeon E5-2697 v3, 2.60 GHz)

SPECfp_base2006 = 102

CPU2006 license: 9017

Test date: Sep-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Jan-2015

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

Peak Optimization Flags (Continued)

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 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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.dealIII: basepeak = yes

450.soplex: basepeak = yes

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:

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: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp2006 = 107

Lenovo System x3500 M5
(Intel Xeon E5-2697 v3, 2.60 GHz)

SPECfp_base2006 = 102

CPU2006 license: 9017

Test date: Sep-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: Jan-2015

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

Peak Optimization Flags (Continued)

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-HSW-D.20150923.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-D.20150923.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 Sep 23 11:04:15 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 22 September 2015.