



# SPEC® CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

SPECfp®2006 = 74.6

Lenovo System x3250 M5  
(Intel Xeon E3-1231 v3, 3.40 GHz)

SPECfp\_base2006 = 73.3

CPU2006 license: 9017

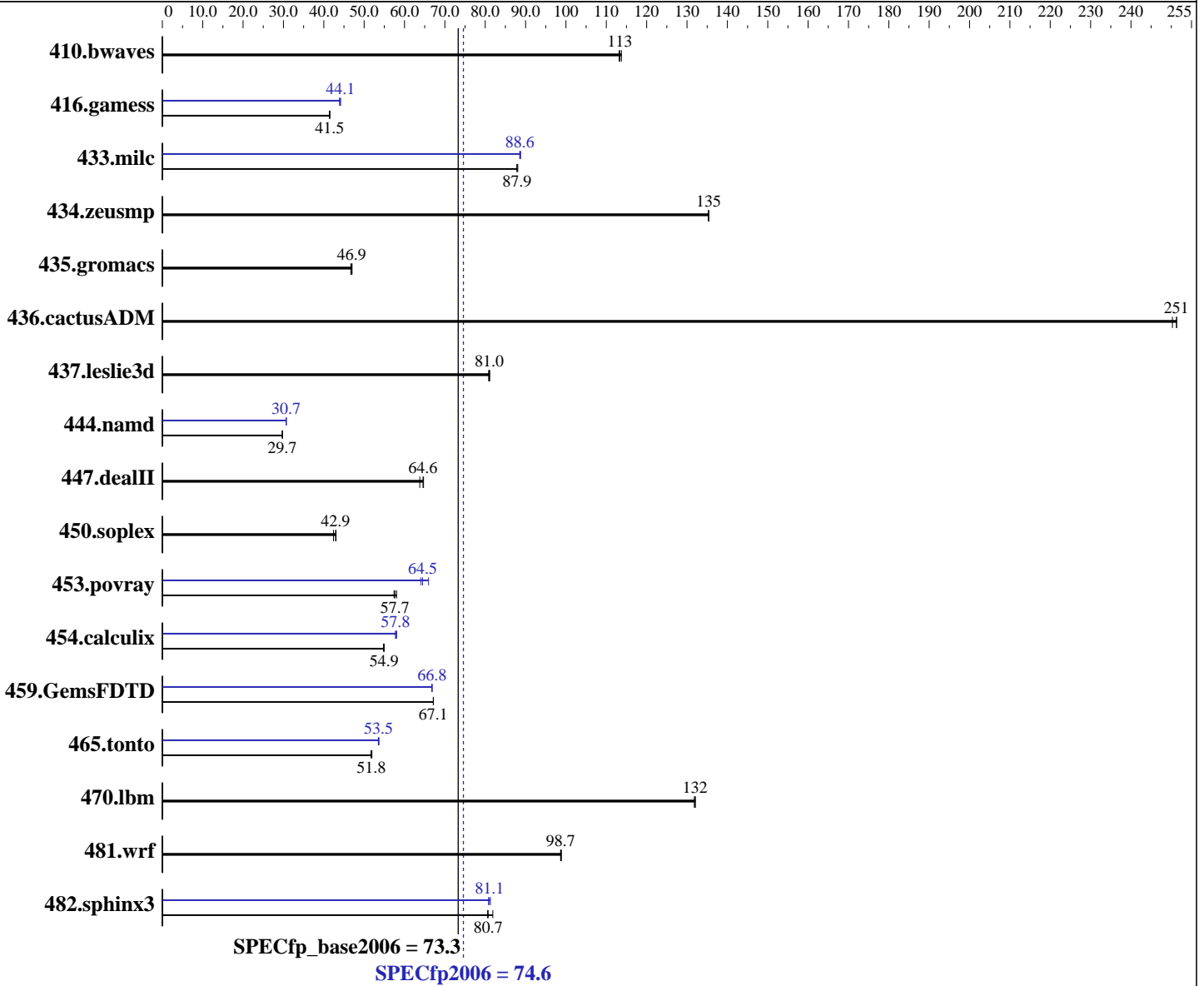
Test date: Dec-2014

Test sponsor: Lenovo Group Limited

Hardware Availability: Jul-2014

Tested by: Lenovo Group Limited

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E3-1231 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 3400  
 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: Red Hat Enterprise Linux Server release 6.5 (Santiago)  
 2.6.32-431.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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

SPECfp2006 = 74.6

Lenovo System x3250 M5  
(Intel Xeon E3-1231 v3, 3.40 GHz)

SPECfp\_base2006 = 73.3

CPU2006 license: 9017

Test date: Dec-2014

Test sponsor: Lenovo Group Limited

Hardware Availability: Jul-2014

Tested by: Lenovo Group Limited

Software Availability: Nov-2013

L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 16 GB (4 x 4 GB 2Rx8 PC3-12800U-13)  
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM  
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	120	113	<u>120</u>	<u>113</u>	119	114	120	113	<u>120</u>	<u>113</u>	119	114
416.gamess	473	41.4	<u>472</u>	<u>41.5</u>	472	41.5	444	44.1	<u>444</u>	<u>44.1</u>	446	43.9
433.milc	104	87.9	<u>104</u>	<u>87.9</u>	104	88.1	103	88.8	<u>104</u>	<u>88.6</u>	104	88.6
434.zeusmp	67.2	135	<u>67.2</u>	<u>135</u>	67.2	135	67.2	135	<u>67.2</u>	<u>135</u>	67.2	135
435.gromacs	152	47.0	<u>152</u>	<u>46.9</u>	153	46.7	152	47.0	<u>152</u>	<u>46.9</u>	153	46.7
436.cactusADM	47.6	251	47.7	250	<u>47.6</u>	<u>251</u>	47.6	251	47.7	250	<u>47.6</u>	<u>251</u>
437.leslie3d	<u>116</u>	<u>81.0</u>	116	81.1	116	80.8	<u>116</u>	<u>81.0</u>	116	81.1	116	80.8
444.namd	<u>270</u>	<u>29.7</u>	270	29.7	270	29.7	261	30.7	261	30.7	<u>261</u>	<u>30.7</u>
447.dealII	<u>177</u>	<u>64.6</u>	179	63.8	177	64.7	<u>177</u>	<u>64.6</u>	179	63.8	177	64.7
450.soplex	197	42.4	194	43.0	<u>194</u>	<u>42.9</u>	197	42.4	194	43.0	<u>194</u>	<u>42.9</u>
453.povray	92.7	57.4	91.6	58.1	<u>92.3</u>	<u>57.7</u>	80.7	66.0	<u>82.5</u>	<u>64.5</u>	83.0	64.1
454.calculix	150	54.9	151	54.8	<u>150</u>	<u>54.9</u>	142	58.1	<u>143</u>	<u>57.8</u>	143	57.8
459.GemsFDTD	158	67.1	<u>158</u>	<u>67.1</u>	158	67.1	159	66.8	<u>159</u>	<u>66.8</u>	159	66.8
465.tonto	190	51.7	<u>190</u>	<u>51.8</u>	190	51.9	184	53.5	<u>184</u>	<u>53.5</u>	183	53.7
470.lbm	<u>104</u>	<u>132</u>	104	132	104	132	<u>104</u>	<u>132</u>	104	132	104	132
481.wrf	<u>113</u>	<u>98.7</u>	113	98.7	113	98.9	<u>113</u>	<u>98.7</u>	113	98.7	113	98.9
482.sphinx3	242	80.6	238	81.9	<u>241</u>	<u>80.7</u>	240	81.3	<u>240</u>	<u>81.1</u>	241	80.8

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 Maximum Performance  
Sysinfo program /home/SPEC\_ic14/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on localhost.localdomain Thu Dec 18 07:27:28 2014

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 = 74.6**

Lenovo System x3250 M5  
(Intel Xeon E3-1231 v3, 3.40 GHz)

**SPECfp\_base2006 = 73.3**

**CPU2006 license:** 9017

**Test date:** Dec-2014

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** Jul-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Nov-2013

### Platform Notes (Continued)

```

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E3-1231 v3 @ 3.40GHz
    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:      16165980 kB
HugePages_Total:    0
Hugepagesize:    2048 kB

/usr/bin/lsb_release -d
  Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
EST 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 16 23:19

SPEC is set to: /home/SPEC_ic14
Filesystem                Type      Size   Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_home ext4      860G   21G  795G   3% /home

Additional information from dmidecode:
BIOS IBM  -[JUE115CUS-1.06]- 11/11/2014
Memory:
  4x Hynix/Hyundai HMT351U7EFR8A-PB 4 GB 1600 MHz 2 rank

(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_ic14/libs/32:/home/SPEC_ic14/libs/64:/home/SPEC_ic14/sh"
OMP_NUM_THREADS = "4"

```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Lenovo Group Limited**

**SPECfp2006 = 74.6**

Lenovo System x3250 M5  
(Intel Xeon E3-1231 v3, 3.40 GHz)

**SPECfp\_base2006 = 73.3**

**CPU2006 license:** 9017

**Test date:** Dec-2014

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** Jul-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Nov-2013

## General Notes (Continued)

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  
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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Lenovo Group Limited**

**SPECfp2006 = 74.6**

Lenovo System x3250 M5  
(Intel Xeon E3-1231 v3, 3.40 GHz)

**SPECfp\_base2006 = 73.3**

**CPU2006 license:** 9017

**Test date:** Dec-2014

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** Jul-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Nov-2013

## Base Optimization Flags (Continued)

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:

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:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

SPECfp2006 = 74.6

Lenovo System x3250 M5  
(Intel Xeon E3-1231 v3, 3.40 GHz)

SPECfp\_base2006 = 73.3

CPU2006 license: 9017

Test date: Dec-2014

Test sponsor: Lenovo Group Limited

Hardware Availability: Jul-2014

Tested by: Lenovo Group Limited

Software Availability: Nov-2013

## Peak Optimization Flags (Continued)

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: 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

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-ic14.0-official-linux64.20140128.html>

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



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

Lenovo System x3250 M5  
(Intel Xeon E3-1231 v3, 3.40 GHz)

SPECfp2006 = 74.6

SPECfp\_base2006 = 73.3

**CPU2006 license:** 9017

**Test sponsor:** Lenovo Group Limited

**Tested by:** Lenovo Group Limited

**Test date:** Dec-2014

**Hardware Availability:** Jul-2014

**Software Availability:** Nov-2013

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 Jan 14 10:25:51 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 13 January 2015.