



# SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Lenovo Global Technology

SPECfp®\_rate2006 = 209

Lenovo ThinkServer TS150  
(3.50 GHz, Intel Xeon E3-1230 v6)

SPECfp\_rate\_base2006 = 201

CPU2006 license: 9017

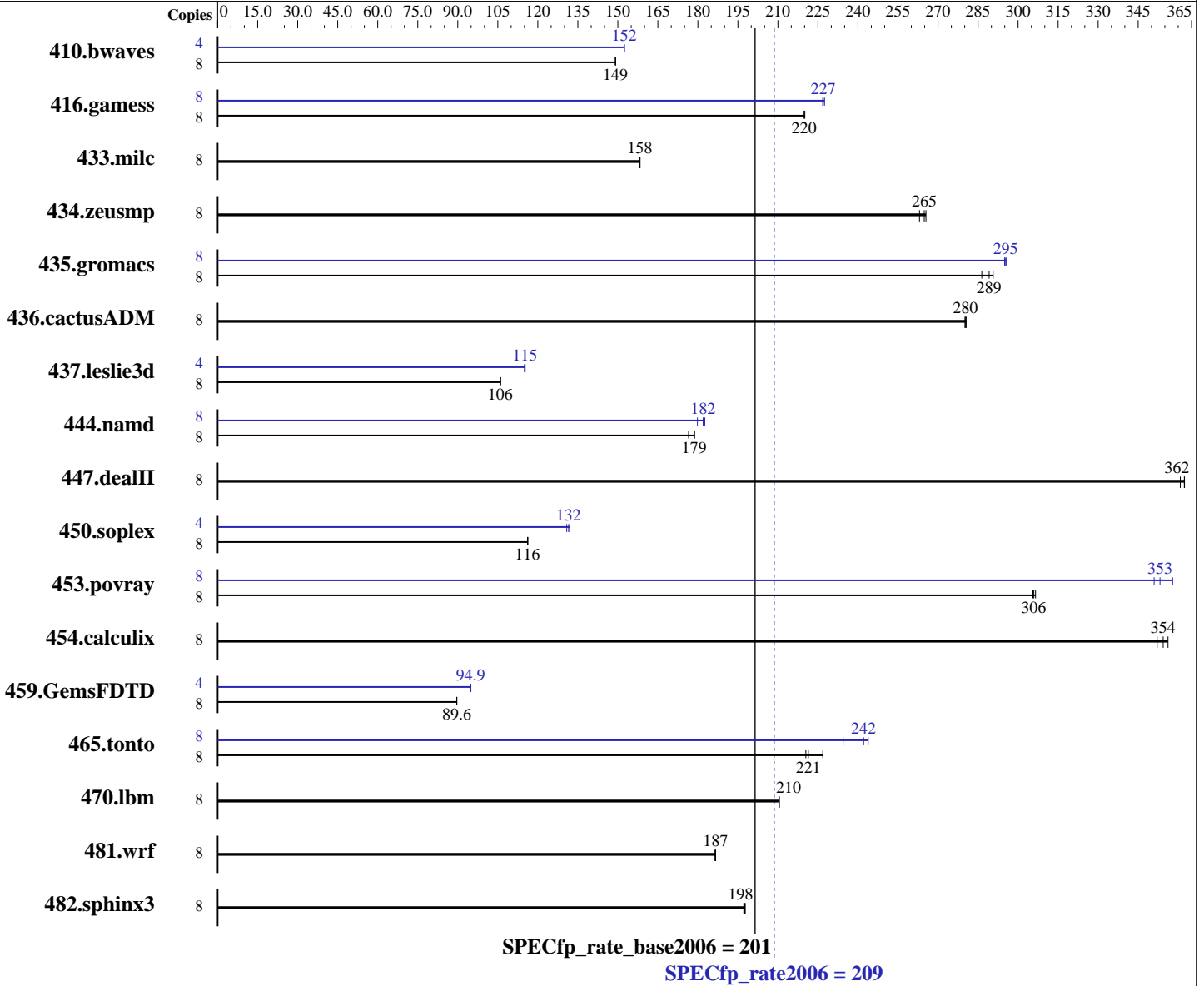
Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017



### Hardware

CPU Name: Intel Xeon E3-1230 v6  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz  
 CPU MHz: 3500  
 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 SP1 (x86\_64)  
 Kernel 3.12.49-11-default  
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux;  
 Fortran: Version 17.0.3.191 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

## Lenovo Global Technology

SPECfp\_rate2006 = 209

Lenovo ThinkServer TS150  
(3.50 GHz, Intel Xeon E3-1230 v6)

SPECfp\_rate\_base2006 = 201

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

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	729	149	729	149	<u>729</u>	<u>149</u>	4	357	152	357	152	<u>357</u>	<u>152</u>
416.gamess	8	<u>712</u>	<u>220</u>	712	220	713	220	8	689	227	<u>690</u>	<u>227</u>	691	227
433.milc	8	<u>464</u>	<u>158</u>	464	158	464	158	8	<u>464</u>	<u>158</u>	464	158	464	158
434.zeusmp	8	277	263	274	265	<u>275</u>	<u>265</u>	8	277	263	274	265	<u>275</u>	<u>265</u>
435.gromacs	8	199	286	197	291	<u>198</u>	<u>289</u>	8	194	295	193	296	<u>193</u>	<u>295</u>
436.cactusADM	8	<u>341</u>	<u>280</u>	341	281	341	280	8	<u>341</u>	<u>280</u>	341	281	341	280
437.leslie3d	8	<u>710</u>	<u>106</u>	709	106	710	106	4	327	115	<u>326</u>	<u>115</u>	326	115
444.namd	8	359	179	<u>359</u>	<u>179</u>	363	177	8	351	183	357	180	<u>353</u>	<u>182</u>
447.dealII	8	253	362	254	361	<u>253</u>	<u>362</u>	8	253	362	254	361	<u>253</u>	<u>362</u>
450.soplex	8	574	116	574	116	<u>574</u>	<u>116</u>	4	253	132	255	131	<u>254</u>	<u>132</u>
453.povray	8	<u>139</u>	<u>306</u>	139	307	139	306	8	<u>121</u>	<u>353</u>	121	351	119	358
454.calculix	8	185	356	<u>186</u>	<u>354</u>	187	352	8	185	356	<u>186</u>	<u>354</u>	187	352
459.GemsFDTD	8	947	89.6	947	89.7	<u>947</u>	<u>89.6</u>	4	<u>447</u>	<u>94.9</u>	447	94.9	447	94.9
465.tonto	8	357	220	347	227	<u>356</u>	<u>221</u>	8	323	244	<u>325</u>	<u>242</u>	336	234
470.lbm	8	522	210	522	210	<u>522</u>	<u>210</u>	8	522	210	522	210	<u>522</u>	<u>210</u>
481.wrf	8	<u>479</u>	<u>187</u>	479	187	480	186	8	<u>479</u>	<u>187</u>	479	187	480	186
482.sphinx3	8	791	197	788	198	<u>789</u>	<u>198</u>	8	791	197	788	198	<u>789</u>	<u>198</u>

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

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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 configuration:  
Intel Virtualization Technology set to Enabled  
VT-d set to Enabled

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Lenovo Global Technology

SPECfp\_rate2006 = 209

Lenovo ThinkServer TS150  
(3.50 GHz, Intel Xeon E3-1230 v6)

SPECfp\_rate\_base2006 = 201

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

### Platform Notes (Continued)

ICE Performance Mode set to Full Speed  
Sysinfo program /home/cpu2006-1.2-ic17.0u3/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on TS150-MLK Mon Aug 7 00:14:40 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 E3-1230 v6 @ 3.50GHz
 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: 66040164 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# 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-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"
```

```
uname -a:
Linux TS150-MLK 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Aug 4 13:50
```

```
SPEC is set to: /home/cpu2006-1.2-ic17.0u3
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 689G 16G 673G 3% /home
Continued on next page
```



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECfp\_rate2006 = 209

Lenovo ThinkServer TS150  
(3.50 GHz, Intel Xeon E3-1230 v6)

SPECfp\_rate\_base2006 = 201

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

## Platform Notes (Continued)

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 S06KT03A 02/07/2017

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-ic17.0u3/lib/ia32:/home/cpu2006-1.2-ic17.0u3/lib/intel64"

LD\_LIBRARY\_PATH = "\$LD\_LIBRARY\_PATH:/home/cpu2006-1.2-ic17.0u3/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 by default

Filesystem page cache cleared with:

shell invocation of 'sync; echo 3 > /proc/sys/vm/drop\_caches' prior to run

## 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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECfp\_rate2006 = 209

Lenovo ThinkServer TS150  
(3.50 GHz, Intel Xeon E3-1230 v6)

SPECfp\_rate\_base2006 = 201

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

## Base Portability Flags (Continued)

```

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 Global Technology

SPECfp\_rate2006 = 209

Lenovo ThinkServer TS150  
(3.50 GHz, Intel Xeon E3-1230 v6)

SPECfp\_rate\_base2006 = 201

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

## 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.lelie3d: -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 Global Technology

SPECfp\_rate2006 = 209

Lenovo ThinkServer TS150  
(3.50 GHz, Intel Xeon E3-1230 v6)

SPECfp\_rate\_base2006 = 201

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

## 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-revF.html>

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Settings-V1.2-KBL-revC.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-revF.xml>

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Settings-V1.2-KBL-revC.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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.

Report generated on Wed Sep 6 11:47:25 2017 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 5 September 2017.