



SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR950
(2.00 GHz, Intel Xeon Platinum 8153)

SPECfp®2006 = 115

SPECfp_base2006 = 109

CPU2006 license: 9017

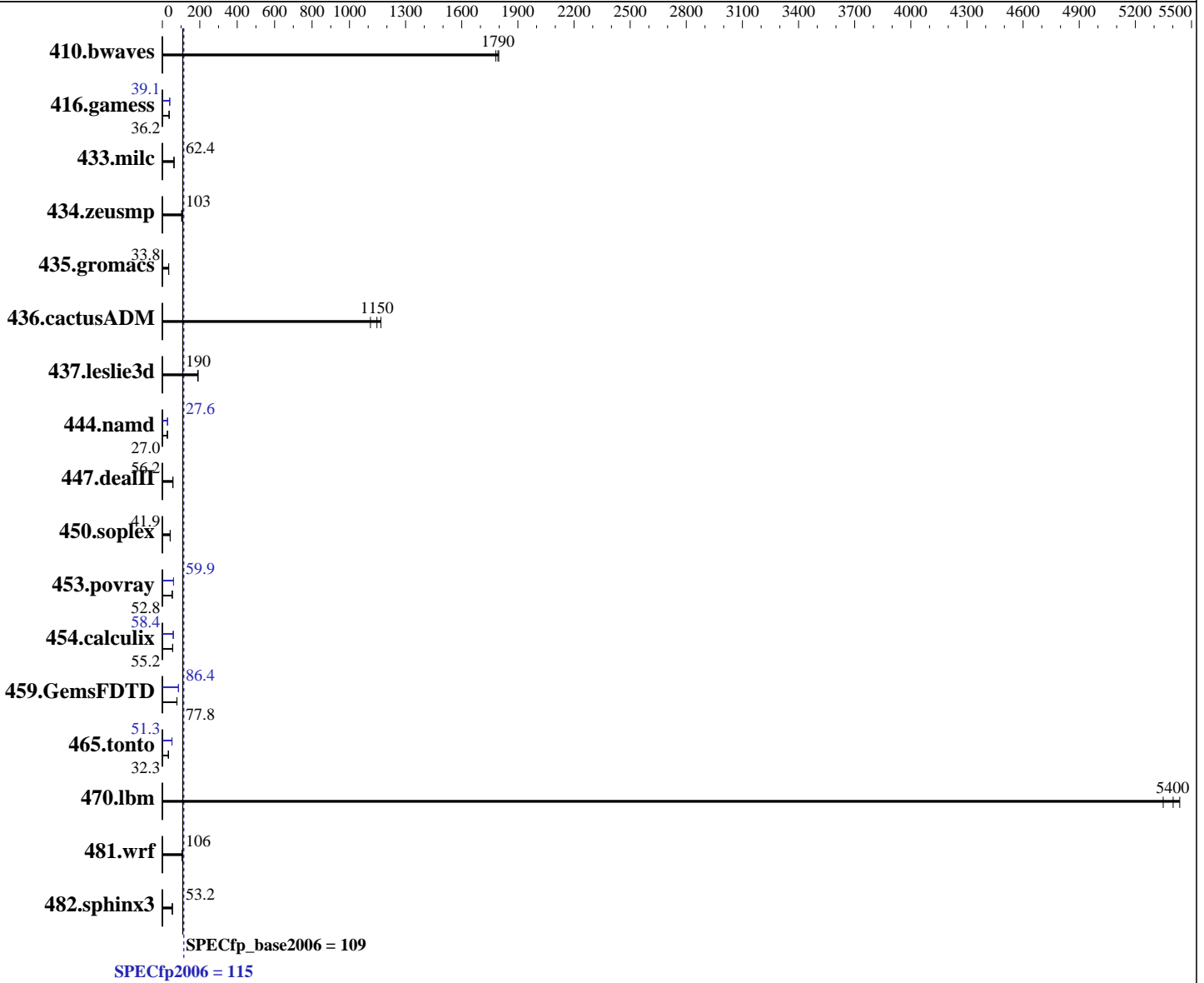
Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Sep-2017

Hardware Availability: Sep-2017

Software Availability: Apr-2017



Hardware

CPU Name: Intel Xeon Platinum 8153
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 128 cores, 8 chips, 16 cores/chip
 CPU(s) orderable: 2,4,8 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 1 MB 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 17.0.3.191 of Intel C/C++ Compiler for Linux;
 Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux
 Auto Parallel: Yes
 File System: btrfs
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECfp2006 = **115**

ThinkSystem SR950
(2.00 GHz, Intel Xeon Platinum 8153)

SPECfp_base2006 = **109**

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

L3 Cache: 22 MB I+D on chip per chip
Other Cache: None
Memory: 3 TB (96 x 32 GB 2Rx4 PC4-2666V-R)
Disk Subsystem: 1 x 800 GB SAS SSD
Other Hardware: None

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	7.63	1780	7.56	1800	<u>7.58</u>	<u>1790</u>	7.63	1780	7.56	1800	<u>7.58</u>	<u>1790</u>
416.gamess	540	36.3	<u>540</u>	<u>36.2</u>	541	36.2	502	39.0	<u>501</u>	<u>39.1</u>	501	39.1
433.milc	148	61.9	147	62.5	<u>147</u>	<u>62.4</u>	148	61.9	147	62.5	<u>147</u>	<u>62.4</u>
434.zeusmp	88.0	103	86.8	105	<u>87.9</u>	<u>103</u>	88.0	103	86.8	105	<u>87.9</u>	<u>103</u>
435.gromacs	211	33.8	<u>212</u>	<u>33.8</u>	212	33.7	211	33.8	<u>212</u>	<u>33.8</u>	212	33.7
436.cactusADM	10.7	1110	10.2	1170	<u>10.4</u>	<u>1150</u>	10.7	1110	10.2	1170	<u>10.4</u>	<u>1150</u>
437.leslie3d	49.3	191	49.5	190	<u>49.5</u>	<u>190</u>	49.3	191	49.5	190	<u>49.5</u>	<u>190</u>
444.namd	<u>297</u>	<u>27.0</u>	297	27.0	298	27.0	<u>291</u>	<u>27.6</u>	291	27.6	290	27.6
447.dealII	203	56.3	<u>203</u>	<u>56.2</u>	203	56.2	203	56.3	<u>203</u>	<u>56.2</u>	203	56.2
450.soplex	198	42.1	200	41.8	<u>199</u>	<u>41.9</u>	198	42.1	200	41.8	<u>199</u>	<u>41.9</u>
453.povray	101	52.7	100	53.0	<u>101</u>	<u>52.8</u>	89.0	59.8	88.7	60.0	<u>88.8</u>	<u>59.9</u>
454.calculix	149	55.2	150	55.1	<u>149</u>	<u>55.2</u>	141	58.4	141	58.4	<u>141</u>	<u>58.4</u>
459.GemsFDTD	136	78.2	<u>136</u>	<u>77.8</u>	137	77.7	<u>123</u>	<u>86.4</u>	124	85.8	123	86.4
465.tonto	297	33.1	310	31.7	<u>304</u>	<u>32.3</u>	191	51.5	192	51.2	<u>192</u>	<u>51.3</u>
470.lbm	2.53	5440	2.57	5350	<u>2.54</u>	<u>5400</u>	2.53	5440	2.57	5350	<u>2.54</u>	<u>5400</u>
481.wrf	104	108	<u>105</u>	<u>106</u>	106	105	104	108	<u>105</u>	<u>106</u>	106	105
482.sphinx3	366	53.2	<u>366</u>	<u>53.2</u>	367	53.1	366	53.2	<u>366</u>	<u>53.2</u>	367	53.1

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 configuration:
Choose Operating Mode set to Maximum Performance
Hyper-Threading set to Disable
LLC dead line alloc set to Disable
Sysinfo program /home/cpu2006-1.2-ic17.0u3/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on Proton8S-SUSE12SP2 Tue Sep 5 18:06:47 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECfp2006 = 115

ThinkSystem SR950
(2.00 GHz, Intel Xeon Platinum 8153)

SPECfp_base2006 = 109

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

```

model name      : Intel(R) Xeon(R) Platinum 8153 CPU @ 2.00GHz
 8 "physical id"s (chips)
128 "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     : 16
  siblings      : 16
  physical 0:   cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 1:   cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 2:   cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 3:   cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 4:   cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 5:   cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 6:   cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 7:   cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size      : 22528 KB

```

From /proc/meminfo

```

MemTotal:      3170209980 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 Proton8S-SUSE12SP2 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 Sep 5 18:05

SPEC is set to: /home/cpu2006-1.2-ic17.0u3

```

Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdb3        btrfs    743G  62G  681G   9% /home

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECfp2006 = 115

ThinkSystem SR950
(2.00 GHz, Intel Xeon Platinum 8153)

SPECfp_base2006 = 109

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Sep-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 -[PSE105L-1.00]- 06/22/2017

Memory:

96x Samsung M393A4K40BB2-CTD 32 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes

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

KMP_AFFINITY = "granularity=fine,compact"

LD_LIBRARY_PATH = "/home/cpu2006-1.2-ic17.0u3/lib/ia32:/home/cpu2006-1.2-ic17.0u3/lib/intel64:/home/cpu2006-1.2-ic17.0u3/sh10.2"

OMP_NUM_THREADS = "128"

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

Transparent Huge Pages disabled with:

echo never > /sys/kernel/mm/transparent_hugepage/enabled

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

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

SPECfp2006 = 115

ThinkSystem SR950
(2.00 GHz, Intel Xeon Platinum 8153)

SPECfp_base2006 = 109

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

Base Portability Flags (Continued)

```

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
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 -qopt-prefetch

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

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



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECfp2006 = 115

ThinkSystem SR950
(2.00 GHz, Intel Xeon Platinum 8153)

SPECfp_base2006 = 109

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

Peak Portability Flags

Same as Base Portability Flags

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

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

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: basepeak = yes

459.GemsFDTD: -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
-qopt-prefetch -parallel

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECfp2006 = 115

ThinkSystem SR950
(2.00 GHz, Intel Xeon Platinum 8153)

SPECfp_base2006 = 109

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

Peak Optimization Flags (Continued)

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

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-Flags-V1.2-SKL-C.20171004.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-Flags-V1.2-SKL-C.20171004.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 Oct 4 12:34:34 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 October 2017.