## SPEC® CFP2006 Result

### Lenovo Global Technology
ThinkSystem SR630  
(3.20 GHz, Intel Xeon Gold 6134)

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>147</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>143</td>
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**CPU2006 license:** 9017  
**Test date:** Jul-2017  
**Test sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology  
**Hardware Availability:** Aug-2017  
**Software Availability:** Apr-2017

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Score</th>
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<tr>
<td>410.bwaves</td>
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<tr>
<td>416.gamess</td>
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<td>433.milc</td>
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<td>434.zeusmp</td>
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<td>435.gromacs</td>
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<td>436.cactusADM</td>
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<td>437.leslie3d</td>
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<td>444.namd</td>
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<td>481.wrf</td>
<td>133</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>80.3</td>
</tr>
</tbody>
</table>

### 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++  
| Fortran | Compiler for Linux;  
| Fortran Compiler | 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) |

### Hardware

<table>
<thead>
<tr>
<th>CPU Name</th>
<th>Intel Xeon Gold 6134</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.70 GHz</td>
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<tr>
<td>CPU MHz</td>
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<td>FPU</td>
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<tr>
<td>CPU(s) orderable</td>
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<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
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<tr>
<td>Secondary Cache</td>
<td>1 MB I+D on chip per core</td>
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</tbody>
</table>

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## Lenovo Global Technology

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</tr>
</tbody>
</table>

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 Cable-SPECcpu2017-SUSE12SP2 Fri Jul 28 00:02:30 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
Lenovo Global Technology

ThinkSystem SR630
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SPECfp2006 = 147
SPECfp_base2006 = 143

CPU2006 license: 9017
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Tested by: Lenovo Global Technology

Test date: Jul-2017
Hardware Availability: Aug-2017
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) Gold 6134 CPU @ 3.20GHz
2 "physical id"s (chips)
16 "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 : 8
siblings : 8
physical 0: cores 0 2 3 9 16 19 26 27
physical 1: cores 0 4 5 6 16 19 20 22
cache size : 25344 KB

From /proc/meminfo

MemTotal: 395892352 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 Cable-SPECcpu2017-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 Jul 28 00:02

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

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 btrfs 744G 35G 708G 5% /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.

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**SPEC CFP2006 Result**

**Lenovo Global Technology**

ThinkSystem SR630
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**SPECfp2006 =** 147

**SPECfp_base2006 =** 143

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**Platform Notes (Continued)**

BIOS Lenovo -[IVE109Q-1.00]- 06/28/2017
Memory:
24x Samsung M393A2K43BB1-CTD 16 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-icl17.0u3/lib/ia32:/home/cpu2006-1.2-icl17.0u3/lib/intel64:/home/cpu2006-1.2-icl17.0u3/sh10.2"
OMP_NUM_THREADS = "16"

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
434.zeusmp: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64 -nofor_main
447.dealII: -DSPEC_CPU_LP64

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Lenovo Global Technology
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Base Portability Flags (Continued)

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

Peak Portability Flags

Same as Base Portability Flags
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**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-llp32
- 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

Benchmarks using both Fortran and C:

- 435.gromacs: basepeak = yes
- 436.cactusADM: basepeak = yes

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### Peak Optimization Flags (Continued)

```
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/Lenovo-Platform-Flags-V1.2-SKL-C.20171004.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/Lenovo-Platform-Flags-V1.2-SKL-C.20171004.xml](http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-SKL-C.20171004.xml)

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For other inquiries, please contact webmaster@spec.org.

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