



SPEC® CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint®2006 = 58.3

ThinkSystem SD530
(2.60 GHz, Intel Xeon Silver 4112)

SPECint_base2006 = 55.8

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017



Hardware

CPU Name: Intel Xeon Silver 4112
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: 8.25 MB I+D on chip per chip
 Other Cache: None
 Memory: 384 GB (12 x 32 GB 2Rx4 PC4-2666V-R, running at 2400 MHz)
 Disk Subsystem: 1 x 800 GB SATA SSD
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)
 Kernel 3.10.0-514.el7.x86_64
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.2



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint2006 = **58.3**

ThinkSystem SD530
(2.60 GHz, Intel Xeon Silver 4112)

SPECint_base2006 = **55.8**

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	261	37.4	261	37.4	262	37.3	228	42.8	228	42.8	228	42.8
401.bzip2	414	23.3	413	23.4	414	23.3	410	23.5	411	23.5	411	23.5
403.gcc	240	33.5	240	33.5	241	33.4	234	34.3	234	34.3	234	34.3
429.mcf	138	66.1	141	64.6	140	65.0	142	64.4	138	66.3	139	65.8
445.gobmk	395	26.5	395	26.5	396	26.5	386	27.2	386	27.2	386	27.2
456.hammer	119	78.4	119	78.1	119	78.4	119	78.4	119	78.1	119	78.4
458.sjeng	402	30.1	402	30.1	402	30.1	394	30.7	394	30.7	394	30.7
462.libquantum	6.31	3280	6.29	3290	6.19	3350	6.31	3280	6.29	3290	6.19	3350
464.h264ref	394	56.2	394	56.1	393	56.2	394	56.2	394	56.1	393	56.2
471.omnetpp	281	22.2	281	22.2	281	22.2	230	27.1	230	27.1	231	27.1
473.astar	234	30.0	234	30.0	234	30.0	235	29.9	234	29.9	234	30.0
483.xalancbmk	111	61.9	111	62.0	111	62.1	99.6	69.3	99.7	69.2	99.8	69.1

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

Submit Notes

The config file option 'submit' was used.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS Configuration:

Choose Operating Mode set to Maximum Performance
 LLC dead line alloc set to Disable
 Hyper-Threading set to Disable
 Sysinfo program /home/cpu2006-1.2-ic17.0u3/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on Stark-node-02 Thu Aug 3 04:26:01 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) Silver 4112 CPU @ 2.60GHz
 2 "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.)

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint2006 = 58.3

ThinkSystem SD530
(2.60 GHz, Intel Xeon Silver 4112)

SPECint_base2006 = 55.8

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

Platform Notes (Continued)

```
cpu cores : 4
siblings  : 4
physical 0: cores 1 2 4 5
physical 1: cores 1 2 3 4
cache size : 8448 KB
```

From /proc/meminfo

```
MemTotal:      395751076 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

From /etc/*release* /etc/*version*

os-release:

```
NAME="Red Hat Enterprise Linux Server"
VERSION="7.3 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.3"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
```

redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

uname -a:

```
Linux Stark-node-02 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Aug 2 18:15

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

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda4        xfs       688G  27G  662G   4% /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.

BIOS Lenovo -[TEE113D-1.00]- 05/19/2017

Memory:

4x NO DIMM NO DIMM

12x Samsung M393A4K40BB2-CTD 32 GB 2 rank 2666 MHz, configured at 2400 MHz

(End of data from sysinfo program)



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint2006 = 58.3

ThinkSystem SD530
(2.60 GHz, Intel Xeon Silver 4112)

SPECint_base2006 = 55.8

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

General Notes

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

KMP_AFFINITY = "granularity=fine,compact,0,3"

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 = "8"

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

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
-auto-p32

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh10.2 -lsmartheap64



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint2006 = 58.3

ThinkSystem SD530
(2.60 GHz, Intel Xeon Silver 4112)

SPECint_base2006 = 55.8

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks (except as noted below):

icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32

401.bzip2: -DSPEC_CPU_LP64

403.gcc: -DSPEC_CPU_LP64

429.mcf: -DSPEC_CPU_LP64

445.gobmk: -D_FILE_OFFSET_BITS=64

456.hmmer: -DSPEC_CPU_LP64

458.sjeng: -DSPEC_CPU_LP64

462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

464.h264ref: -DSPEC_CPU_LP64

471.omnetpp: -D_FILE_OFFSET_BITS=64

473.astar: -DSPEC_CPU_LP64

483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -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-prefetch

401.bzip2: -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 -auto-ilp32 -qopt-prefetch

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint2006 = 58.3

ThinkSystem SD530
(2.60 GHz, Intel Xeon Silver 4112)

SPECint_base2006 = 55.8

CPU2006 license: 9017

Test date: Aug-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Apr-2017

Peak Optimization Flags (Continued)

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-qopt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
-qopt-prefetch -auto-p32

445.gobmk: -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)

456.hmmr: basepeak = yes

458.sjeng: -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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -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-ra-region-strategy=block
-Wl,-z,muldefs -L/sh10.2 -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-Wl,-z,muldefs -L/sh10.2 -lsmartheap

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

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 CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SD530
(2.60 GHz, Intel Xeon Silver 4112)

SPECint2006 = 58.3

SPECint_base2006 = 55.8

CPU2006 license: 9017

Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Aug-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017

SPEC and SPECint 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 12:36:20 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 October 2017.