



SPEC® CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint®_rate2006 = 3990

ThinkSystem SN850
(2.10 GHz, Intel Xeon Gold 6152)

SPECint_rate_base2006 = 3790

CPU2006 license: 9017

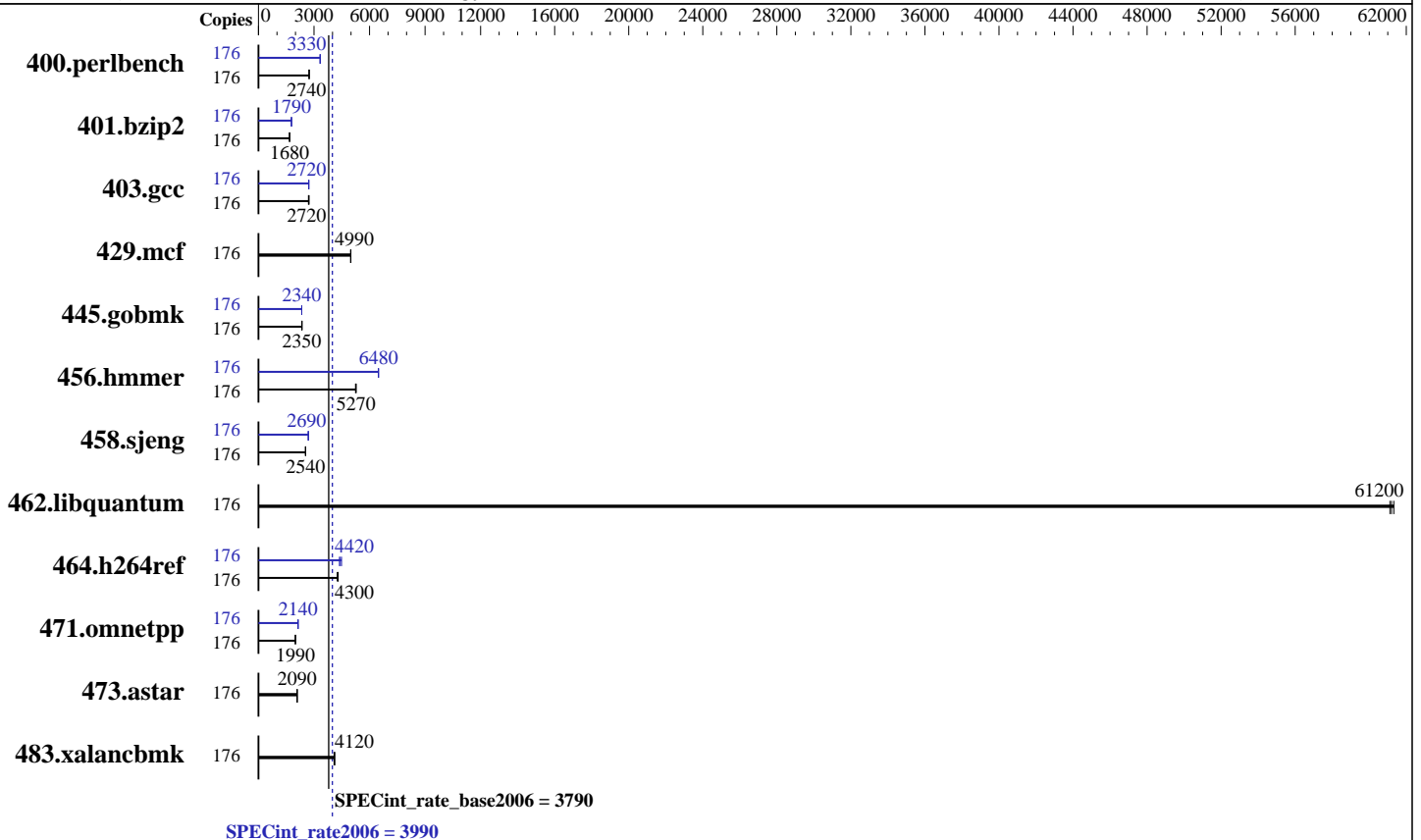
Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Nov-2016



Hardware

CPU Name: Intel Xeon Gold 6152
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 2100
 FPU: Integrated
 CPU(s) enabled: 88 cores, 4 chips, 22 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 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: 30.25 MB I+D on chip per chip
 Other Cache: None
 Memory: 1536 GB (48 x 32 GB 2Rx4 PC4-2666V-R)
 Disk Subsystem: 800 GB tmpfs
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 SP2 (x86_64)
 Kernel 4.4.21-69-default
 Compiler: C/C++: Version 17.0.1.132 of Intel C/C++ Compiler for Linux
 Auto Parallel: No
 File System: tmpfs
 System State: Run level 3 (multi-user)
 Base Pointers: 32-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

SPECint_rate2006 = 3990

ThinkSystem SN850
(2.10 GHz, Intel Xeon Gold 6152)

SPECint_rate_base2006 = 3790

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Nov-2016

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	176	627	2740	628	2740	631	2730	176	516	3330	516	3330	516	3330
401.bzip2	176	1013	1680	1009	1680	1009	1680	176	951	1790	956	1780	951	1790
403.gcc	176	521	2720	525	2700	519	2730	176	522	2720	522	2720	520	2720
429.mcf	176	322	4990	322	4990	323	4970	176	322	4990	322	4990	323	4970
445.gobmk	176	787	2350	786	2350	787	2350	176	790	2340	790	2340	790	2340
456.hammer	176	313	5240	312	5270	311	5270	176	254	6480	253	6490	253	6480
458.sjeng	176	838	2540	837	2540	838	2540	176	791	2690	791	2690	790	2700
462.libquantum	176	59.6	61200	59.5	61300	59.7	61100	176	59.6	61200	59.5	61300	59.7	61100
464.h264ref	176	905	4300	905	4300	916	4250	176	880	4420	891	4370	868	4490
471.omnetpp	176	552	1990	552	1990	551	2000	176	515	2140	514	2140	514	2140
473.astar	176	591	2090	591	2090	592	2090	176	591	2090	591	2090	592	2090
483.xalancbmk	176	295	4120	295	4120	297	4080	176	295	4120	295	4120	297	4080

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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"
Tmpfs filesystem can be set with:
mount -t tmpfs -o size=800g tmpfs /home

Platform Notes

BIOS configuration:
Choose Operating Mode set to Maximum Performance
DCU Streamer Prefetcher set to Disable
SNC set to Enable
Per Core P-state set to Disable
UPI Prefetcher set to Disable
Stale AtoS set to Enable
LLC dead line alloc set to Disable
Sysinfo program /home/cpu2006-1.2-ic17.0u1/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on SN850 Wed Sep 13 20:22:50 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>

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint_rate2006 = 3990

ThinkSystem SN850
(2.10 GHz, Intel Xeon Gold 6152)

SPECint_rate_base2006 = 3790

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Nov-2016

Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Gold 6152 CPU @ 2.10GHz
 4 "physical id"s (chips)
176 "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 : 22
  siblings  : 44
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
  physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
  physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
28
cache size : 30976 KB

From /proc/meminfo
MemTotal:      1584974876 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 SN850 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 13 20:20

SPEC is set to: /home/cpu2006-1.2-ic17.0u1
Filesystem      Type      Size      Used Avail Use% Mounted on
tmpfs           tmpfs    800G      6.9G 794G   1% /home
Additional information from dmidecode:

```

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint_rate2006 = 3990

ThinkSystem SN850
(2.10 GHz, Intel Xeon Gold 6152)

SPECint_rate_base2006 = 3790

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Nov-2016

Platform Notes (Continued)

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 -[IVE111C-1.00]- 07/17/2017

Memory:

48x 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:

LD_LIBRARY_PATH = "/home/cpu2006-1.2-ic17.0u1/lib/ia32:/home/cpu2006-1.2-ic17.0u1/lib/intel64:/home/cpu2006-1.2-ic17.0u1/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:

```
echo 1> /proc/sys/vm/drop_caches
```

runspec command invoked through numactl i.e.:

```
numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

C benchmarks:

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

C++ benchmarks:

```
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32

401.bzip2: -D_FILE_OFFSET_BITS=64

403.gcc: -D_FILE_OFFSET_BITS=64

429.mcf: -D_FILE_OFFSET_BITS=64

445.gobmk: -D_FILE_OFFSET_BITS=64

456.hmmmer: -D_FILE_OFFSET_BITS=64

458.sjeng: -D_FILE_OFFSET_BITS=64

462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

464.h264ref: -D_FILE_OFFSET_BITS=64

471.omnetpp: -D_FILE_OFFSET_BITS=64

473.astar: -D_FILE_OFFSET_BITS=64

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint_rate2006 = 3990

ThinkSystem SN850
(2.10 GHz, Intel Xeon Gold 6152)

SPECint_rate_base2006 = 3790

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Nov-2016

Base Portability Flags (Continued)

483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

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

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

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

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64

401.bzip2: -DSPEC_CPU_LP64

403.gcc: -D_FILE_OFFSET_BITS=64

429.mcf: -D_FILE_OFFSET_BITS=64

445.gobmk: -D_FILE_OFFSET_BITS=64

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint_rate2006 = 3990

ThinkSystem SN850
(2.10 GHz, Intel Xeon Gold 6152)

SPECint_rate_base2006 = 3790

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Nov-2016

Peak Portability Flags (Continued)

456.hmmer: -DSPEC_CPU_LP64
 458.sjeng: -DSPEC_CPU_LP64
 462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
 464.h264ref: -D_FILE_OFFSET_BITS=64
 471.omnetpp: -D_FILE_OFFSET_BITS=64
 473.astar: -D_FILE_OFFSET_BITS=64
 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-AVX512(pass 2)
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -auto-ilp32 -qopt-mem-layout-trans=3

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -qopt-prefetch -auto-ilp32
 -qopt-mem-layout-trans=3

403.gcc: -xCORE-AVX512 -ipo -O3 -no-prec-div
 -qopt-mem-layout-trans=3

429.mcf: basepeak = yes

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -qopt-mem-layout-trans=3

456.hmmer: -xCORE-AVX512 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
 -qopt-mem-layout-trans=3

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -unroll4 -auto-ilp32
 -qopt-mem-layout-trans=3

462.libquantum: basepeak = yes

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -unroll2 -qopt-mem-layout-trans=3

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2)

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECint_rate2006 = 3990

ThinkSystem SN850
(2.10 GHz, Intel Xeon Gold 6152)

SPECint_rate_base2006 = 3790

CPU2006 license: 9017

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Nov-2016

Peak Optimization Flags (Continued)

471.omnetpp (continued):

```
-qopt-ra-region-strategy=block
-qopt-mem-layout-trans=3 -Wl,-z,muldefs
-L/sh10.2 -lsmartheap
```

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

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-revD.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-revD.xml>

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-SKL-C.20171004.xml>

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 Fri Oct 13 10:12:55 2017 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 12 October 2017.