SPEC® CINT2006 Result
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Supermicro

Supermicro X11SAE-M motherboard
(X11SAE-M , Intel Core i5-6500T)

$SPECint®2006 =$ 59.0

$SPECint\_base2006 =$ 57.5
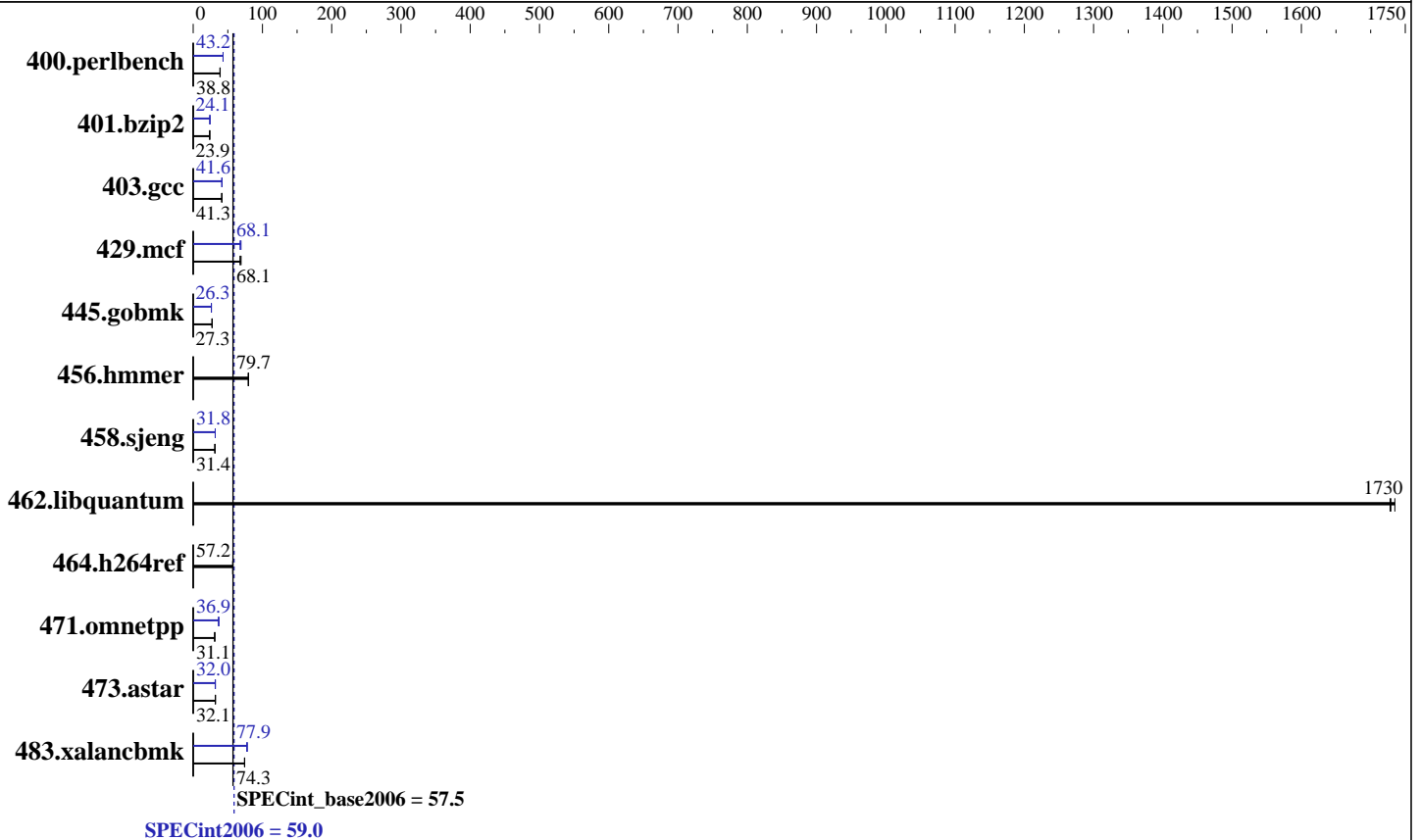
CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Jan-2016
Hardware Availability: Sep-2015
Software Availability: Sep-2015

Benchmark results:
- 400.perlbench: 43.2 / 38.8
- 401.bzip2: 24.1 / 23.9
- 403.gcc: 41.6 / 41.3
- 429.mcf: 68.1 / 68.1
- 445.gobmk: 26.3 / 27.3
- 456.hmmer: 79.7
- 458.sjeng: 31.8 / 31.4
- 462.libquantum: 1730
- 464.h264ref: 57.2
- 471.omnetpp: 36.9 / 31.1
- 473.astar: 32.0 / 32.1
- 483.xalancbmk: 77.9 / 74.3

SPECint_base2006 = 57.5
SPECint2006 = 59.0

Hardware

CPU Name:	Intel Core i5-6500T
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
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
L3 Cache:	6 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (4 x 4 GB 1Rx8 PC4-2133P-U)
Disk Subsystem:	1 x 400 GB SATA III SSD
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.e17.x86_64
Compiler:	C/C++: Version 16.0.0.101 of Intel C++ Studio XE 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

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Results Table

Benchmark	Base						Peak					
	Seconds	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	250	39.0	252	38.7	**252**	**38.8**	227	43.1	**226**	**43.2**	226	43.2
401.bzip2	404	23.9	**404**	**23.9**	406	23.8	399	24.2	400	24.1	**400**	**24.1**
403.gcc	195	41.4	**195**	**41.3**	195	41.3	193	41.6	195	41.3	**193**	**41.6**
429.mcf	135	67.7	**134**	**68.1**	132	69.2	132	69.1	**134**	**68.1**	134	67.9
445.gobmk	384	27.3	384	27.3	**384**	**27.3**	399	26.3	399	26.3	**399**	**26.3**
456.hmmer	117	80.0	117	79.5	**117**	**79.7**	117	80.0	117	79.5	**117**	**79.7**
458.sjeng	385	31.4	386	31.4	**385**	**31.4**	**380**	**31.8**	380	31.8	380	31.8
462.libquantum	**12.0**	**1730**	11.9	1730	12.0	1730	**12.0**	**1730**	11.9	1730	12.0	1730
464.h264ref	**387**	**57.2**	387	57.2	387	57.2	**387**	**57.2**	387	57.2	387	57.2
471.omnetpp	201	31.1	201	31.1	**201**	**31.1**	**169**	**36.9**	171	36.6	169	36.9
473.astar	218	32.2	221	31.8	**219**	**32.1**	219	32.0	221	31.8	**219**	**32.0**
483.xalancbmk	**92.9**	**74.3**	92.8	74.4	93.2	74.1	**88.5**	**77.9**	89.1	77.5	88.5	78.0

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

As tested, the system used a Supermicro CSE-731i-300B chassis.
The chassis is configured with 2 PWS-305-PQ redundant power supply, 1 SNK-P0046A4 heatsink,
as well as 1 FAN-0108L4 rear cooling fan.
 Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
 $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
 running on localhost.localdomain Sat Jan 30 08:23:21 2016

 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) Core(TM) i5-6500T CPU @ 2.50GHz
       1 "physical id"s (chips)
       4 "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

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Platform Notes (Continued)

```
      siblings  : 4
      physical 0: cores 0 1 2 3
   cache size : 6144 KB

 From /proc/meminfo
    MemTotal:       16039968 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    os-release:
       NAME="Red Hat Enterprise Linux Server"
       VERSION="7.1 (Maipo)"
       ID="rhel"
       ID_LIKE="fedora"
       VERSION_ID="7.1"
       PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
       ANSI_COLOR="0;31"
       CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
    redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
    system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

 uname -a:
    Linux localhost.localdomain 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38
    EST 2015 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Jan 29 12:32

 SPEC is set to: /usr/cpu2006
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda2      xfs   369G  173G  197G  47% /
 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 American Megatrends Inc. 1.0a 12/21/2015
    Memory:
    4x Micron 8ATF51264AZ-2G1A2 4 GB 1 rank 2133 MHz

 (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,scatter"
 LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
 OMP_NUM_THREADS = "4"
```

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General Notes (Continued)

```
Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

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 -opt-prefetch -auto-p32

C++ benchmarks:
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

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Peak Compiler Invocation

C benchmarks (except as noted below):
    `icc -m64`

   400.perlbench: `icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

     445.gobmk: `icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

C++ benchmarks (except as noted below):
    `icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

      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: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
        `-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
        `-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch`
        `-ansi-alias`

     401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
        `-ipo(pass 2) -O3(pass 2) -no-prec-div`
        `-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32`
        `-opt-prefetch -ansi-alias`

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

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

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Peak Optimization Flags (Continued)

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias`

456.hmmer: basepeak = yes

458.sjeng: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
`-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4`

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
`-par-num-threads=1(pass 1) -prof-use(pass 2)`
`-opt-ra-region-strategy=block          -ansi-alias`
`-Wl,-z,muldefs -L/sh -lsmartheap`

473.astar: `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch`
`-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64`

483.xalancbmk: `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch`
`-ansi-alias -Wl,-z,muldefs -L/sh -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-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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