SPEC® CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

$SPECint^{®}2006 =$ 54.6

$SPECint\_base2006 =$ 53.2

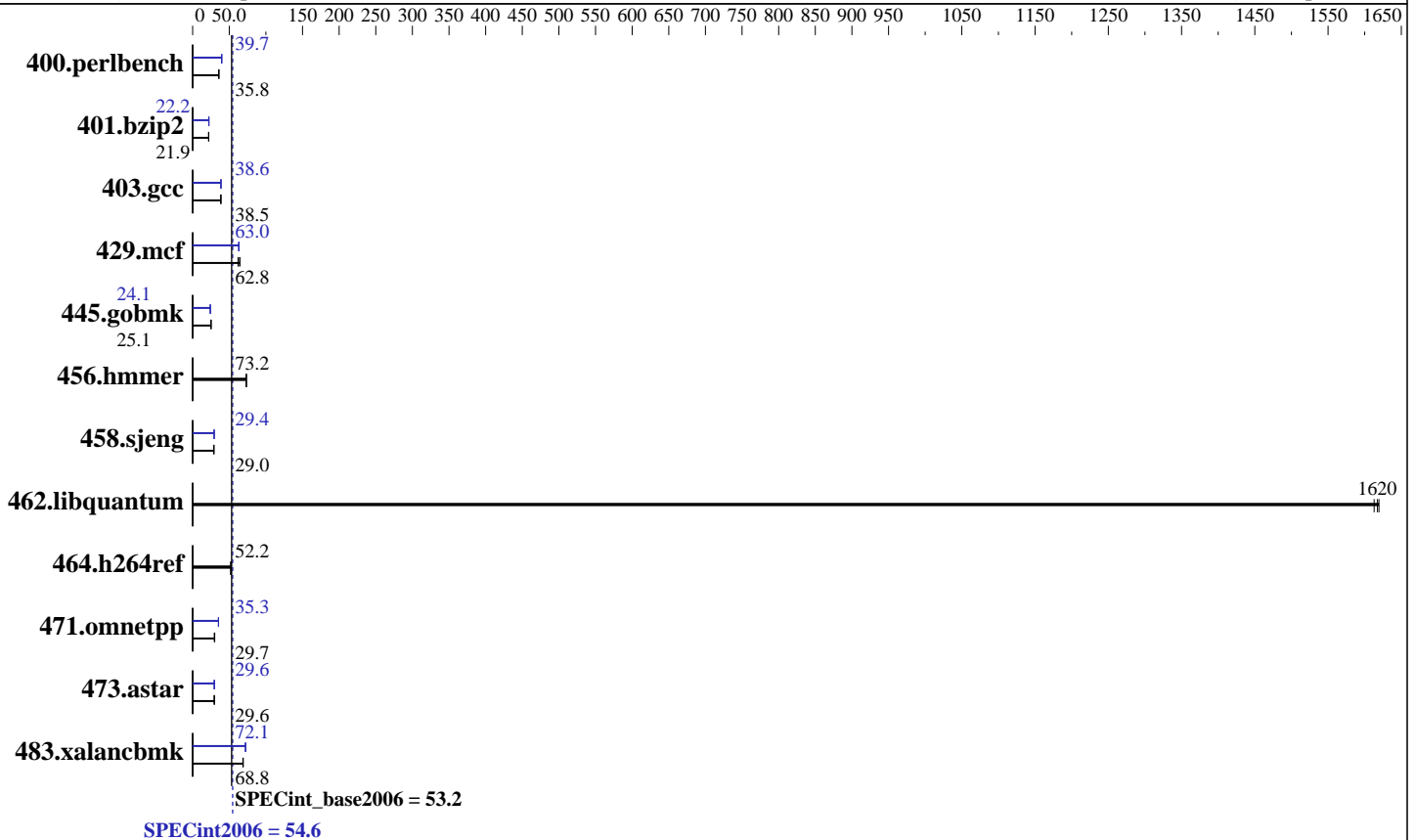|	
CPU2006 license: 001176	**Test date:** Jan-2016
Test sponsor: Supermicro	**Hardware Availability:** Sep-2015
Tested by: Supermicro	**Software Availability:** Sep-2015

Results graph showing benchmark scores:

- 400.perlbench: 39.7 / 35.8
- 401.bzip2: 22.2 / 21.9
- 403.gcc: 38.6 / 38.5
- 429.mcf: 63.0 / 62.8
- 445.gobmk: 24.1 / 25.1
- 456.hmmer: 73.2
- 458.sjeng: 29.4 / 29.0
- 462.libquantum: 1620
- 464.h264ref: 52.2
- 471.omnetpp: 35.3 / 29.7
- 473.astar: 29.6 / 29.6
- 483.xalancbmk: 72.1 / 68.8

SPECint_base2006 = 53.2
SPECint2006 = 54.6

Hardware

CPU Name:	Intel Core i5-6400T
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2200
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 PC4-2800R-U, running at 2133 MHz)
Disk Subsystem:	1 x 200 GB SATA III SSD
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.el7.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

SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

SPECint2006 = 54.6

SPECint_base2006 = 53.2

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**273**	**35.8**	274	35.6	273	35.8	**246**	**39.7**	245	39.8	247	39.6
401.bzip2	441	21.9	440	21.9	**441**	**21.9**	436	22.1	**436**	**22.2**	434	22.2
403.gcc	**209**	**38.5**	209	38.6	209	38.5	**209**	**38.6**	208	38.8	209	38.6
429.mcf	**145**	**62.8**	141	64.6	147	61.9	**145**	**63.0**	145	62.8	144	63.3
445.gobmk	**418**	**25.1**	418	25.1	418	25.1	435	24.1	**435**	**24.1**	435	24.1
456.hmmer	127	73.3	**127**	**73.2**	127	73.2	127	73.3	**127**	**73.2**	127	73.2
458.sjeng	**417**	**29.0**	417	29.0	417	29.0	**412**	**29.4**	412	29.4	412	29.4
462.libquantum	12.8	1620	12.8	1610	**12.8**	**1620**	12.8	1620	12.8	1610	**12.8**	**1620**
464.h264ref	425	52.1	**424**	**52.2**	424	52.2	425	52.1	**424**	**52.2**	424	52.2
471.omnetpp	207	30.2	**210**	**29.7**	210	29.7	177	35.3	**177**	**35.3**	178	35.2
473.astar	237	29.7	238	29.5	**238**	**29.6**	237	29.6	238	29.5	**237**	**29.6**
483.xalancbmk	99.9	69.1	101	68.6	**100**	**68.8**	95.7	72.1	95.5	72.2	**95.6**	**72.1**

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

As tested, the system used a Supermicro CSE-743TQ-1200B-SQ chassis.
The chassis is confugured with a PWS-1K25P-PQ power supply, 1 SNK-P0051AP4 heatsink,
as well as 1 FAN-0103L4 rear fan and 2 FAN-0104L4 chassis fan.
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on C7Z170-01 Tue Jan 5 04:59:58 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) i5-6400T CPU @ 2.20GHz
      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

Supermicro

Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

SPECint2006 =   54.6

SPECint_base2006 =   53.2

CPU2006 license: 001176	**Test date:** Jan-2016
Test sponsor: Supermicro	**Hardware Availability:** Sep-2015
Tested by: Supermicro	**Software Availability:** Sep-2015

Platform Notes (Continued)

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

 From /proc/meminfo
    MemTotal:        16206808 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 C7Z170-01 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 5 04:57

 SPEC is set to: /usr/cpu2006
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda2      xfs   183G   32G  151G  18% /
 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. 1.0 12/14/2015
    Memory:
    4x 0420 F4-2800C16-4GRK 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"
```

SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

$SPECint2006 =$ 54.6

$SPECint\_base2006 =$ 53.2

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

SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

SPECint2006 =   54.6

SPECint_base2006 =   53.2

CPU2006 license: 001176	**Test date:** Jan-2016
Test sponsor: Supermicro	**Hardware Availability:** Sep-2015
Tested by: Supermicro	**Software Availability:** Sep-2015

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`

Continued on next page

Supermicro

Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

$SPECint2006 =$ 54.6

$SPECint\_base2006 =$ 53.2

CPU2006 license: 001176	**Test date:** Jan-2016
Test sponsor: Supermicro	**Hardware Availability:** Sep-2015
Tested by: Supermicro	**Software Availability:** Sep-2015

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

Supermicro

Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

SPECint2006 = 54.6

SPECint_base2006 = 53.2

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

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

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 Tue Jan 26 15:11:54 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 26 January 2016.