SPEC® CINT2006 Result

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Supermicro

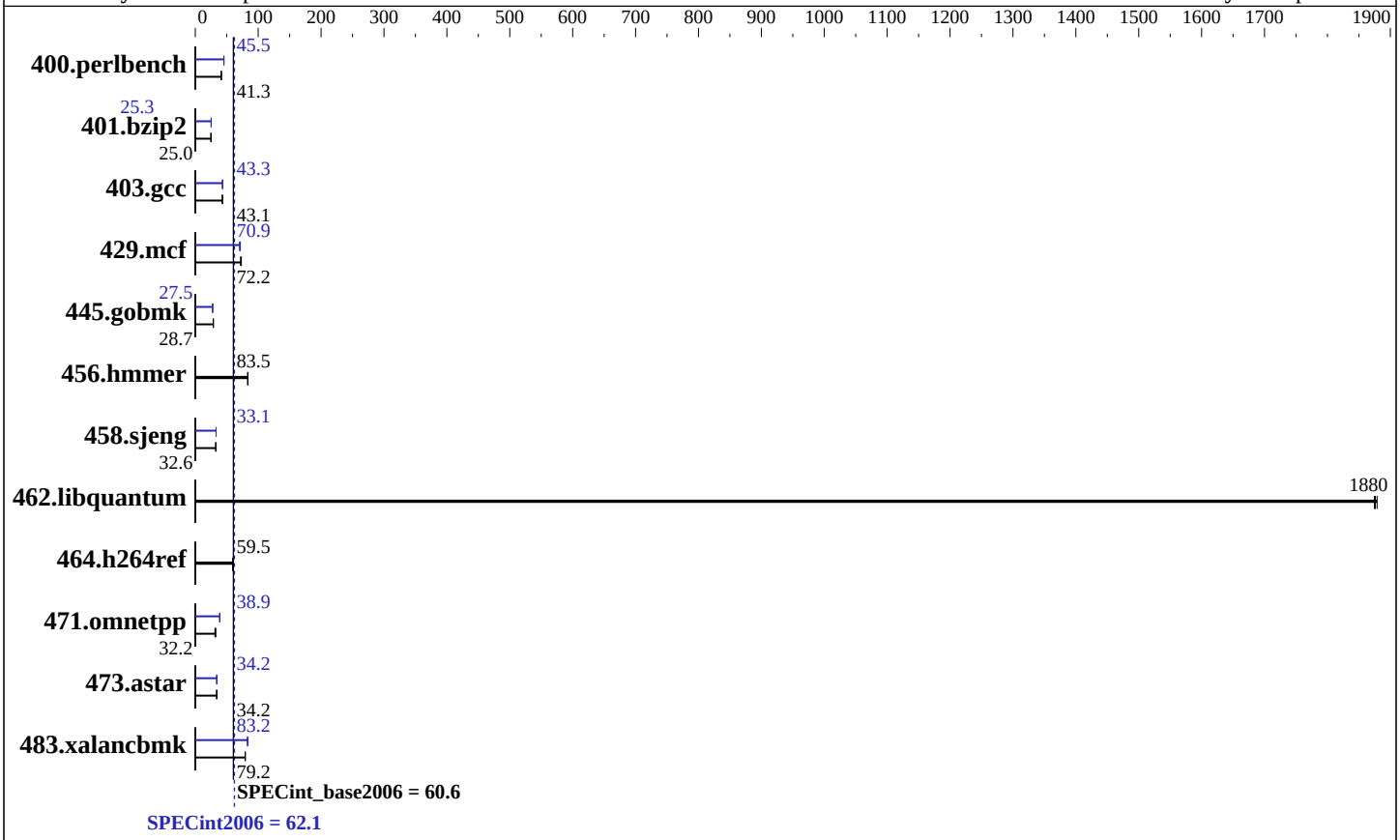
Supermicro X11SSM-F motherboard
(X11SSM-F , Intel Xeon E3-1240L v5)

SPECint®2006 = 62.1

SPECint_base2006 = 60.6

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

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



Hardware

CPU Name:	Intel Xeon E3-1240L v5
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	2100
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:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB (2 x 16 GB 2Rx8 PC4-2133P-E)
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.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

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**237**	**41.3**	238	41.1	235	41.5	215	45.4	215	45.5	**215**	**45.5**
401.bzip2	**387**	**25.0**	387	24.9	386	25.0	382	25.2	382	25.3	**382**	**25.3**
403.gcc	187	43.1	**187**	**43.1**	188	42.9	186	43.4	187	43.1	**186**	**43.3**
429.mcf	**126**	**72.2**	126	72.2	124	73.3	130	70.3	127	71.6	**129**	**70.9**
445.gobmk	**366**	**28.7**	366	28.7	366	28.6	381	27.5	**381**	**27.5**	381	27.5
456.hmmer	112	83.6	**112**	**83.5**	112	83.3	112	83.6	**112**	**83.5**	112	83.3
458.sjeng	**371**	**32.6**	371	32.6	371	32.6	367	33.0	**366**	**33.1**	366	33.1
462.libquantum	11.0	1880	11.1	1870	**11.0**	**1880**	11.0	1880	11.1	1870	**11.0**	**1880**
464.h264ref	372	59.5	372	59.5	**372**	**59.5**	372	59.5	372	59.5	**372**	**59.5**
471.omnetpp	200	31.2	**194**	**32.2**	192	32.5	**161**	**38.9**	161	38.9	161	38.8
473.astar	205	34.2	207	33.9	**206**	**34.2**	**206**	**34.2**	205	34.3	207	34.0
483.xalancbmk	87.2	79.2	**87.1**	**79.2**	86.6	79.7	**82.9**	**83.2**	82.8	83.3	83.3	82.8

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-113MFAC2-R606CB chassis.
The chassis is configured with 2 PWS-606P-1R redundant power supply, 1 SNK-P0046P heatsink,
as well as 4 FAN-0154L4 middle cooling fan.
 BIOS Settings:
 Hyper-threading = Disabled
 Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
 $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
 running on X10SRA-01 Mon Jan  4 19:21:57 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) Xeon(R) CPU E3-1240L v5 @ 2.10GHz
       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
```

Continued on next page

Platform Notes (Continued)

```
      caution.)
         cpu cores : 4
         siblings  : 4
         physical 0: cores 0 1 2 3
      cache size : 8192 KB

   From /proc/meminfo
      MemTotal:       32768808 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 X10SRA-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 4 19:18

   SPEC is set to: /usr/cpu2006
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/sda2      xfs   183G  5.2G  178G   3% /
   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. 1.0b 12/22/2015
     Memory:
      2x Not Specified Not Specified
      2x Samsung M391A2K43BB1-CPB 16 GB 2 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"

 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`

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`

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Peak Optimization Flags (Continued)

401.bzip2 (continued):
-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

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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