SPEC® CINT2006 Result

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Supermicro

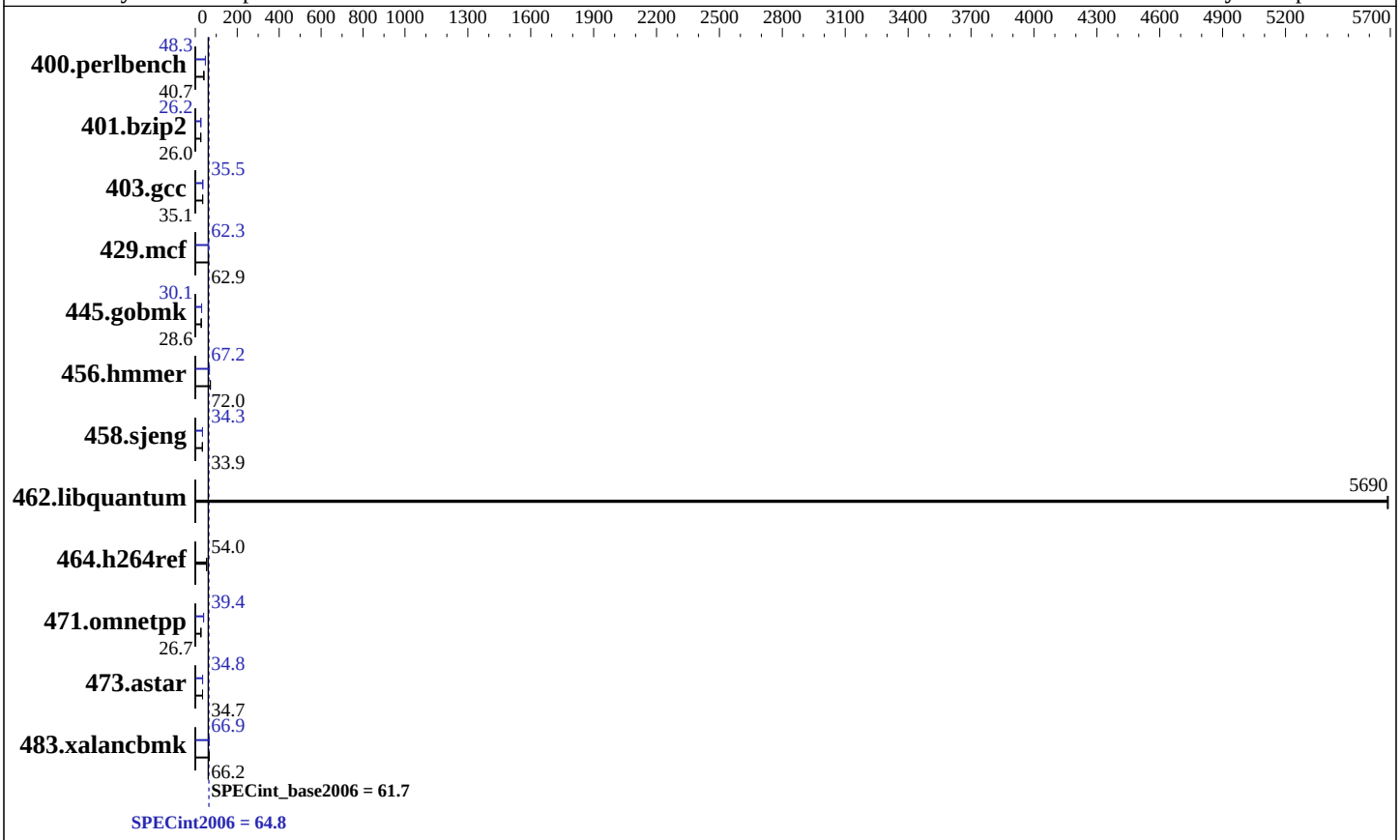
SuperServer 6018R-MT
(X10DRL-i , Intel Xeon E5-2667 v3)

SPECint®2006 = 64.8

SPECint_base2006 = 61.7

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

Test date: Dec-2014
Hardware Availability: Nov-2014
Software Availability: Sep-2013



Hardware

CPU Name:	Intel Xeon E5-2667 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem:	1 x 500 GB SATA III, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-431.el6.17.1.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	240	40.7	**240**	**40.7**	240	40.7	**202**	**48.3**	202	48.3	202	48.3
401.bzip2	**371**	**26.0**	371	26.0	371	26.0	368	26.3	**368**	**26.2**	368	26.2
403.gcc	229	35.2	**229**	**35.1**	230	35.0	**227**	**35.5**	227	35.4	226	35.6
429.mcf	146	62.5	**145**	**62.9**	145	62.9	144	63.4	146	62.3	**146**	**62.3**
445.gobmk	368	28.5	**367**	**28.6**	367	28.6	349	30.1	348	30.1	**348**	**30.1**
456.hmmer	**130**	**72.0**	131	71.0	130	72.0	139	67.2	140	66.8	**139**	**67.2**
458.sjeng	357	33.9	**357**	**33.9**	357	33.9	**352**	**34.3**	352	34.4	353	34.3
462.libquantum	3.64	5690	3.64	5690	**3.64**	**5690**	3.64	5690	3.64	5690	**3.64**	**5690**
464.h264ref	409	54.1	**410**	**54.0**	410	54.0	409	54.1	**410**	**54.0**	410	54.0
471.omnetpp	235	26.6	234	26.7	**234**	**26.7**	157	39.7	159	39.4	**159**	**39.4**
473.astar	203	34.6	**203**	**34.7**	203	34.7	201	34.8	202	34.7	**202**	**34.8**
483.xalancbmk	104	66.1	**104**	**66.2**	104	66.3	103	66.9	**103**	**66.9**	104	66.6

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 settings:
Enforce POR = Disable
Memory Frequency = 2133
Hyper-Threading (ALL) = Disable
Memory info from dmidecode is incorrect. There are only 8x 16GB Samsung memory DIMMs installed
 Sysinfo program /root/cpu2006/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on 23-125.hnet Tue Dec 16 17:51:06 2014

 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 E5-2667 v3 @ 3.20GHz
       2 "physical id"s (chips)
       16 "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 : 8
         siblings  : 8
         physical 0: cores 0 1 2 3 4 5 6 7
         physical 1: cores 0 1 2 3 4 5 6 7
      cache size : 20480 KB

   From /proc/meminfo
      MemTotal:       132051032 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      Red Hat Enterprise Linux Server release 6.4 (Santiago)

   From /etc/*release* /etc/*version*
      redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
      system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

   uname -a:
      Linux 23-125.hnet 2.6.32-431.17.1.el6.x86_64 #1 SMP Fri Apr 11 17:27:00 EDT
      2014 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Dec 16 15:20

   SPEC is set to: /root/cpu2006
      Filesystem     Type    Size  Used Avail Use% Mounted on
      /dev/sda3      ext4    260G   13G  234G   6% /

   Additional information from dmidecode:
     BIOS American Megatrends Inc. 1.0a 08/01/2014
     Memory:
      8x   16 GB
      8x Samsung (date:14/16) M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

   (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 = "/root/cpu2006/libs/32:/root/cpu2006/libs/64:/root/cpu2006/sh"
 OMP_NUM_THREADS = "16"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RedHat EL 6.4
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
  runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>
```

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
```

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Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m32`

473.astar: `icpc -m64`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-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`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-xCORE-AVX2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2)
`-O3`(pass 2) `-no-prec-div`(pass 2) `-prof-use`(pass 2)
`-opt-prefetch -ansi-alias`

401.bzip2: `-xCORE-AVX2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2)
`-O3`(pass 2) `-no-prec-div -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`

445.gobmk: `-xCORE-AVX2`(pass 2) `-prof-gen`(pass 1) `-prof-use`(pass 2)
`-ansi-alias`

456.hmmer: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
`-ansi-alias`

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Peak Optimization Flags (Continued)

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revD.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revD.xml

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