SPEC® CINT2006 Result

Supermicro

SuperServer 6018R-MT
(X10DRL-i , Intel Xeon E5-2643 v3)

$SPECint®2006 = $ 65.0

$SPECint_base2006 = $ 61.9

CPU2006 license: 001176		**Test date:** Dec-2014
Test sponsor: Supermicro		**Hardware Availability:** Nov-2014
Tested by: Supermicro		**Software Availability:** Sep-2013

400.perlbench 49.6 / 41.7
401.bzip2 26.9 / 26.7
403.gcc 36.0 / 35.7
429.mcf 64.0 / 63.4
445.gobmk 30.9 / 30.0
456.hmmer 68.0 / 74.0
458.sjeng 35.1 / 34.7
462.libquantum 4460
464.h264ref 56.7
471.omnetpp 40.4 / 27.0
473.astar 35.7 / 35.5
483.xalancbmk 68.4 / 67.8

SPECint_base2006 = 61.9

SPECint2006 = 65.0

Hardware

CPU Name:	Intel Xeon E5-2643 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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 2.6.32-431.17.1.el6.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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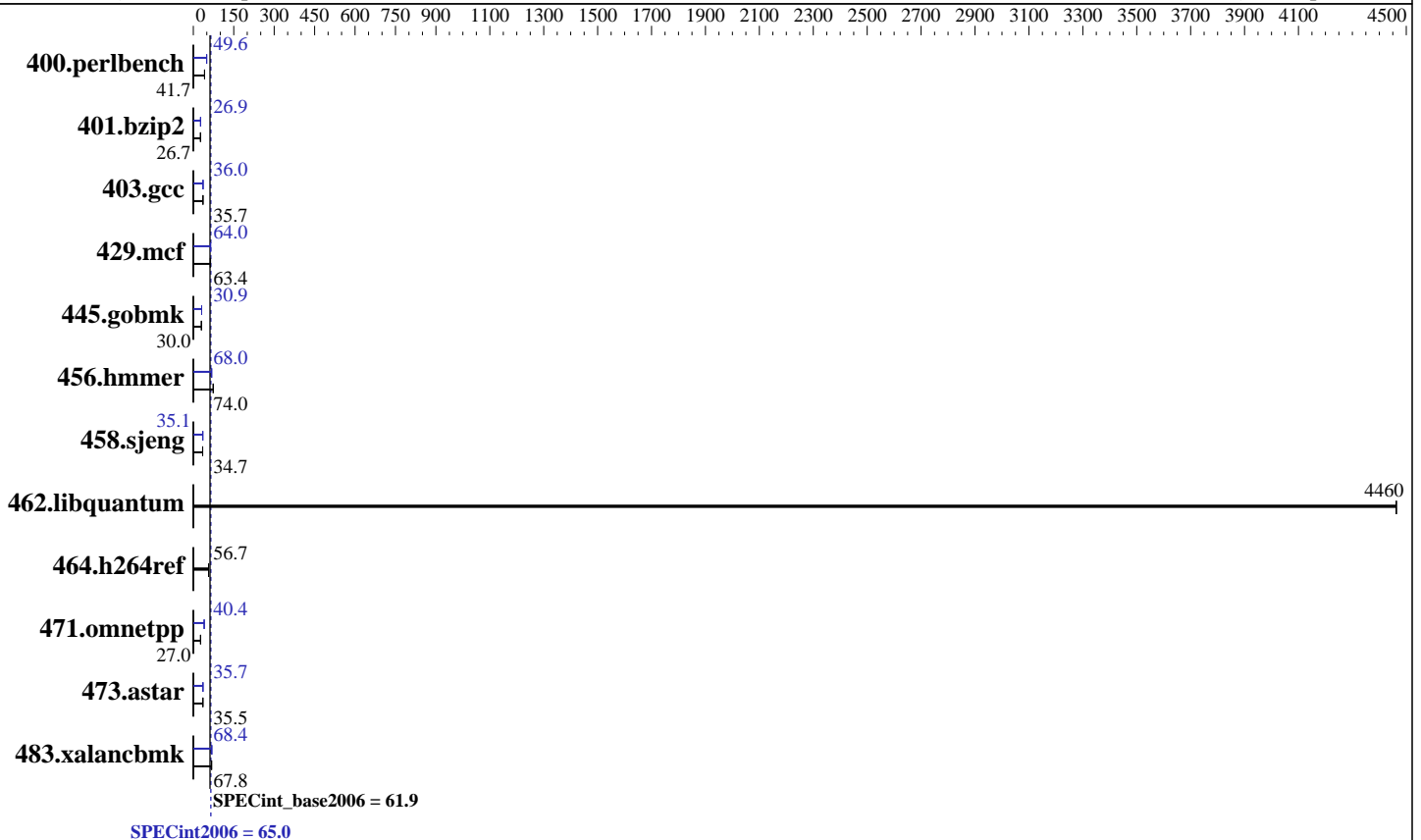$SPECint2006 =$ 65.0

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**235**	**41.7**	234	41.7	235	41.7	**197**	**49.6**	198	49.4	197	49.6
401.bzip2	362	26.7	362	26.7	**362**	**26.7**	**359**	**26.9**	359	26.9	358	27.0
403.gcc	225	35.8	226	35.7	**225**	**35.7**	**223**	**36.0**	223	36.0	223	36.0
429.mcf	**144**	**63.4**	144	63.1	142	64.1	143	63.9	142	64.3	**142**	**64.0**
445.gobmk	**349**	**30.0**	349	30.1	349	30.0	339	30.9	339	31.0	**339**	**30.9**
456.hmmer	126	74.0	127	73.7	**126**	**74.0**	137	67.9	137	68.0	**137**	**68.0**
458.sjeng	**349**	**34.7**	349	34.7	349	34.7	**344**	**35.1**	345	35.1	344	35.2
462.libquantum	4.64	4460	**4.64**	**4460**	4.64	4460	4.64	4460	**4.64**	**4460**	4.64	4460
464.h264ref	390	56.8	391	56.6	**390**	**56.7**	390	56.8	391	56.6	**390**	**56.7**
471.omnetpp	**232**	**27.0**	232	27.0	234	26.7	154	40.5	156	40.1	**155**	**40.4**
473.astar	**198**	**35.5**	199	35.3	198	35.5	196	35.7	197	35.7	**197**	**35.7**
483.xalancbmk	102	67.8	**102**	**67.8**	102	67.7	101	68.2	101	68.5	**101**	**68.4**

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 Configuration:
  DMI info is not displayed correctly. There are only 8x 16GB Samsung memory modules installed in the system
    Sysinfo program /root/cpu2006/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on 23-125.hnet Mon Dec 15 11:53:44 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 E5-2643 v3 @ 3.40GHz
          2 "physical id"s (chips)
          12 "processors"
      cores, siblings (Caution: counting these is hw and system dependent.  The
```

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Platform Notes (Continued)

```
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 6
       siblings  : 6
       physical 0: cores 0 1 2 3 4 5
       physical 1: cores 0 1 2 3 4 5
    cache size : 20480 KB

  From /proc/meminfo
    MemTotal:       132051560 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 15 11:47

  SPEC is set to: /root/cpu2006
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/sda3      ext4    260G  9.4G  238G   4% /

  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 = "12"

   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.:
```

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General Notes (Continued)

```
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
```

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Peak Compiler Invocation

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

    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
```

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Peak Optimization Flags (Continued)

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

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

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