SPEC® CINT2006 Result

Supermicro

SuperServer 5019S-L
(X11SSL-F , Intel Xeon E3-1245 v5)

$SPECint®\_rate2006 =$ 253

$SPECint\_rate\_base2006 =$ 245

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

Copies

- 400.perlbench: 8 / 229, 8 / 195
- 401.bzip2: 8 / 118, 8 / 113
- 403.gcc: 8 / 194, 8 / 193
- 429.mcf: 8 / 302
- 445.gobmk: 8 / 159, 8 / 160
- 456.hmmer: 8 / 451, 8 / 384
- 458.sjeng: 8 / 180, 8 / 173
- 462.libquantum: 8 / 2590
- 464.h264ref: 8 / 308, 8 / 311
- 471.omnetpp: 8 / 113, 8 / 110
- 473.astar: 8 / 130
- 483.xalancbmk: 8 / 293

SPECint_rate_base2006 = 245

SPECint_rate2006 = 253

Hardware

CPU Name:	Intel Xeon E3-1245 v5
CPU Characteristics:	Intel Turbo Boost Technology up to 3.90 GHz
CPU MHz:	3500
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
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:	64 GB (4 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:	No
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.2

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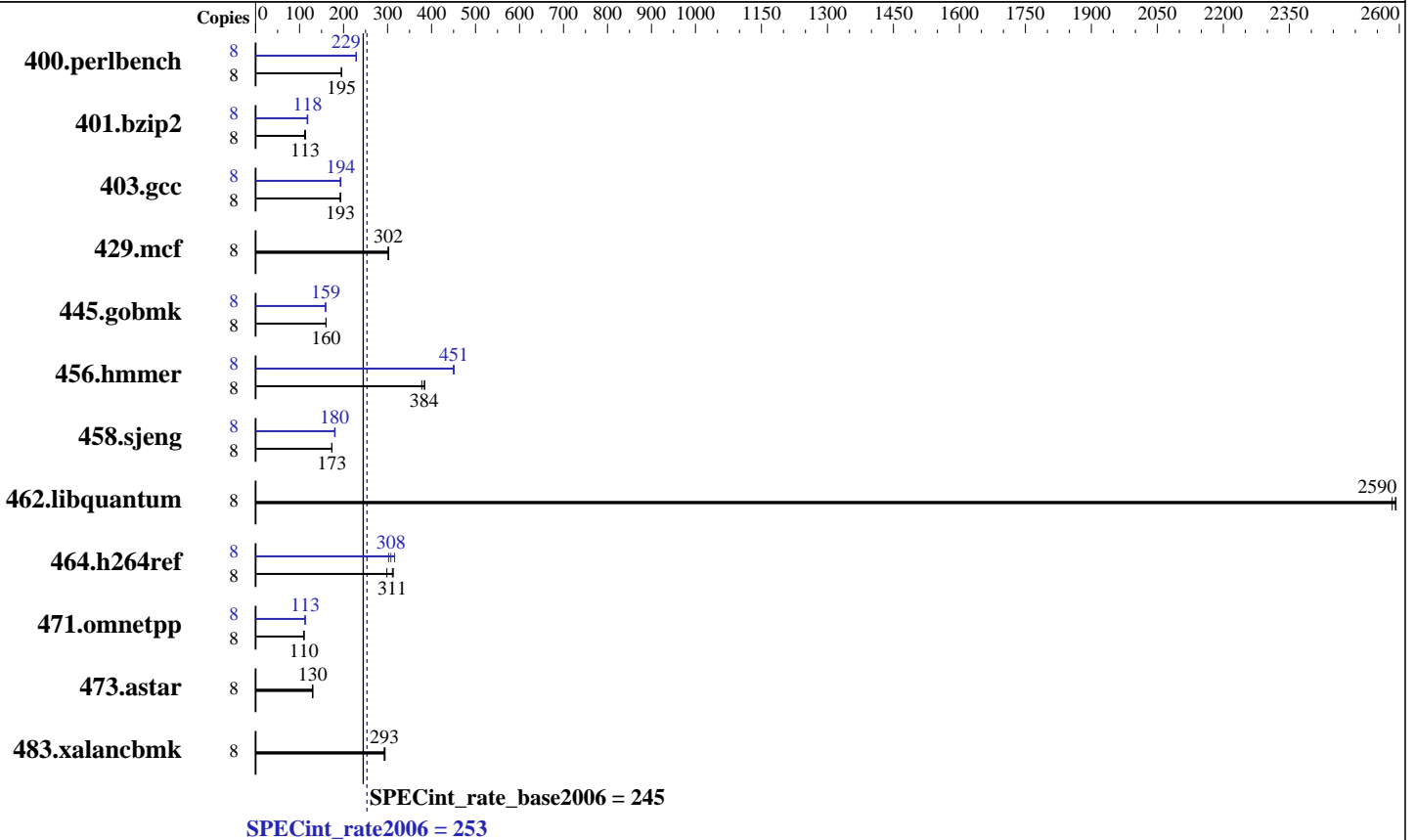
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Results Table

Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
				Base							**Peak**			
400.perlbench	8	400	195	400	195	**400**	**195**	8	342	228	341	229	**342**	**229**
401.bzip2	8	692	112	679	114	**683**	**113**	8	658	117	**653**	**118**	652	118
403.gcc	8	334	193	**334**	**193**	334	193	8	332	194	335	192	**333**	**194**
429.mcf	8	241	303	**241**	**302**	242	301	8	241	303	**241**	**302**	242	301
445.gobmk	8	524	160	**524**	**160**	524	160	8	**527**	**159**	528	159	527	159
456.hmmer	8	198	378	**195**	**384**	194	384	8	166	450	166	451	**166**	**451**
458.sjeng	8	**558**	**173**	558	174	559	173	8	536	181	538	180	**538**	**180**
462.libquantum	8	**64.0**	**2590**	63.9	2590	64.2	2580	8	**64.0**	**2590**	63.9	2590	64.2	2580
464.h264ref	8	593	298	**569**	**311**	566	313	8	560	316	**576**	**308**	585	302
471.omnetpp	8	**455**	**110**	455	110	455	110	8	**444**	**113**	444	113	444	113
473.astar	8	433	130	**433**	**130**	433	130	8	433	130	**433**	**130**	433	130
483.xalancbmk	8	188	294	189	293	**189**	**293**	8	188	294	189	293	**189**	**293**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
   The taskset mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate taskset commands to bind each copy to a specific processor.
For details, please see the config file.
```

Operating System Notes

```
   Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
   Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
   $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
   running on X10SRA-01 Wed Jan 14 13:06:55 2015

   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 E3-1245 v5 @ 3.50GHz
         1 "physical id"s (chips)
         8 "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
         siblings  : 8
```
Continued on next page

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Platform Notes (Continued)

```
      physical 0: cores 0 1 2 3
    cache size : 8192 KB

  From /proc/meminfo
    MemTotal:        65923428 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 14 08:51

  SPEC is set to: /usr/cpu2006
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda2       xfs   183G  5.1G  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. 1.0a 10/23/2015
    Memory:
    4x 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:
  LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

  Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
  memory using RedHat EL 7.1
```

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General Notes (Continued)

```
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

Base Compiler Invocation

C benchmarks:
```
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

C++ benchmarks:
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

Base Portability Flags

```
400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
   401.bzip2: -D_FILE_OFFSET_BITS=64
     403.gcc: -D_FILE_OFFSET_BITS=64
     429.mcf: -D_FILE_OFFSET_BITS=64
  445.gobmk: -D_FILE_OFFSET_BITS=64
  456.hmmer: -D_FILE_OFFSET_BITS=64
   458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
  464.h264ref: -D_FILE_OFFSET_BITS=64
  471.omnetpp: -D_FILE_OFFSET_BITS=64
    473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

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Peak Compiler Invocation

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

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

Peak Portability Flags

```
    400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
       401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
         403.gcc: -D_FILE_OFFSET_BITS=64
         429.mcf: -D_FILE_OFFSET_BITS=64
      445.gobmk: -D_FILE_OFFSET_BITS=64
       456.hmmer: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
       458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
   462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
     464.h264ref: -D_FILE_OFFSET_BITS=64
     471.omnetpp: -D_FILE_OFFSET_BITS=64
       473.astar: -D_FILE_OFFSET_BITS=64
   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) -auto-ilp32

       401.bzip2: -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
                   -auto-ilp32 -ansi-alias

         403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

         429.mcf: basepeak = yes
```

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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
-opt-mem-layout-trans=3

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

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
-auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -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) -unroll2
-ansi-alias

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) -ansi-alias
-opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

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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