SPEC® CINT2006 Result
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Supermicro

SuperServer 5019S-L
(X11SSL-F , Intel Xeon E3-1240 v6)

$SPECint^{®}2006 =$ 78.0
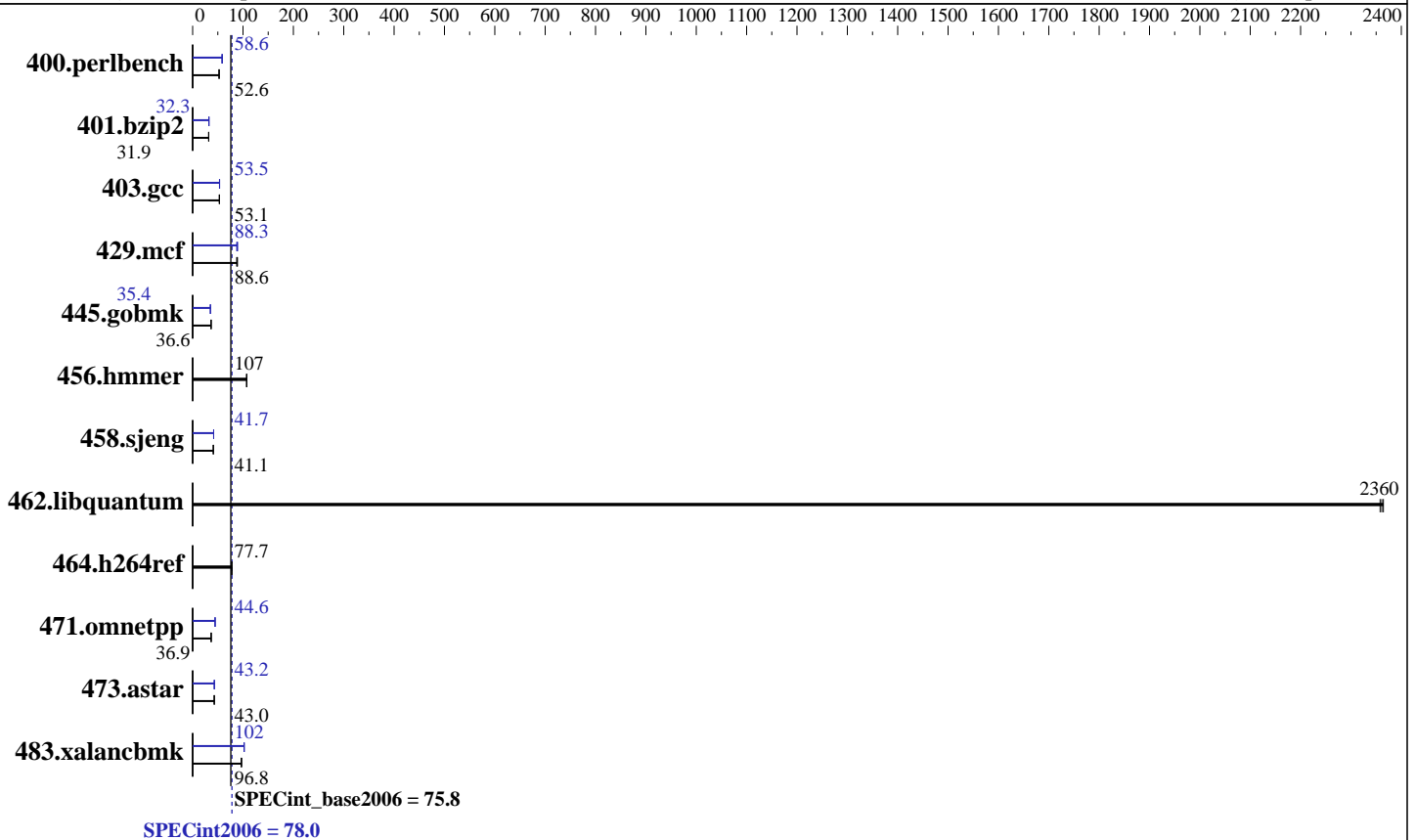
$SPECint\_base2006 =$ 75.8

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

Test date: May-2017
Hardware Availability: Mar-2017
Software Availability: Sep-2015


```
400.perlbench    58.6 / 52.6
401.bzip2        32.3 / 31.9
403.gcc          53.5 / 53.1
429.mcf          88.3 / 88.6
445.gobmk        35.4 / 36.6
456.hmmer        107
458.sjeng        41.7 / 41.1
462.libquantum   2360
464.h264ref      77.7
471.omnetpp      44.6 / 36.9
473.astar        43.2 / 43.0
483.xalancbmk    102 / 96.8
```

SPECint_base2006 = 75.8
SPECint2006 = 78.0

Hardware

CPU Name:	Intel Xeon E3-1240 v6
CPU Characteristics:	Intel Turbo Boost Technology up to 4.10 GHz
CPU MHz:	3700
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 (4 x 8 GB 1Rx8 PC4-2400T-E)
Disk Subsystem:	1 x 400 GB SATA III SSD
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 7.3, Kernel 3.10.0-514.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	**186**	**52.6**	186	52.4	186	52.6	167	58.4	**167**	**58.6**	166	58.8
401.bzip2	303	31.8	302	31.9	**302**	**31.9**	298	32.4	299	32.3	**299**	**32.3**
403.gcc	151	53.2	**152**	**53.1**	152	53.0	150	53.6	151	53.3	**151**	**53.5**
429.mcf	104	87.4	**103**	**88.6**	103	88.9	104	87.6	**103**	**88.3**	102	89.4
445.gobmk	287	36.6	**286**	**36.6**	286	36.7	297	35.4	**297**	**35.4**	297	35.3
456.hmmer	**87.0**	**107**	87.0	107	86.8	108	**87.0**	**107**	87.0	107	86.8	108
458.sjeng	295	41.1	**294**	**41.1**	294	41.1	**290**	**41.7**	290	41.7	290	41.7
462.libquantum	**8.77**	**2360**	8.79	2360	8.76	2360	**8.77**	**2360**	8.79	2360	8.76	2360
464.h264ref	284	78.0	285	77.6	**285**	**77.7**	284	78.0	285	77.6	**285**	**77.7**
471.omnetpp	169	36.9	**170**	**36.9**	171	36.5	140	44.5	140	44.6	**140**	**44.6**
473.astar	163	43.1	164	42.7	**163**	**43.0**	162	43.2	**163**	**43.2**	163	43.0
483.xalancbmk	**71.3**	**96.8**	71.5	96.5	70.9	97.3	67.5	102	67.4	102	**67.5**	**102**

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:
    Hyper Threading = Disabled
    Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on localhost.localdomain Thu May 18 12:02:14 2017

    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 E3-1240 v6 @ 3.70GHz
         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
         siblings  : 4
```

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Platform Notes (Continued)

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

  From /proc/meminfo
    MemTotal:        32796500 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

  From /etc/*release* /etc/*version*
    os-release:
       NAME="Red Hat Enterprise Linux Server"
       VERSION="7.3 (Maipo)"
       ID="rhel"
       ID_LIKE="fedora"
       VERSION_ID="7.3"
       PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
       ANSI_COLOR="0;31"
       CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
    redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
    system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

  uname -a:
    Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13
    EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 May 18 11:57

  SPEC is set to: /usr/cpu2006
    Filesystem              Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-root xfs    50G   11G   40G  21% /
  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. 2.0a 05/15/2017
   Memory:
   4x Micron 9ASF1G72AZ-2G3A1 8 GB 1 rank 2400 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"
```

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Tested by:	Supermicro	**Software Availability:**	Sep-2015

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

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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`

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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`

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

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