SPEC® CINT2006 Result
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Supermicro

SuperWorkstation 5039A-iL
(X11SAE , Intel Core i7-6700)

$SPECint^{®}2006 =$ 74.4

$SPECint\_base2006 =$ 72.3

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

400.perlbench 55.8 / 50.2
401.bzip2 31.1 / 30.7
403.gcc 50.8 / 50.7
429.mcf 84.1 / 84.2
445.gobmk 33.8 / 35.1
456.hmmer 103
458.sjeng 39.9 / 39.3
462.libquantum 2190
464.h264ref 74.2
471.omnetpp 41.8 / 34.7
473.astar 41.2 / 41.3
483.xalancbmk 99.4 / 94.5

SPECint_base2006 = 72.3

SPECint2006 = 74.4

Hardware

CPU Name:	Intel Core i7-6700
CPU Characteristics:	Intel Turbo Boost Technology up to 4.00 GHz
CPU MHz:	3400
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:	64 GB (4 x 16 GB 2Rx8 PC4-2133P-E)
Disk Subsystem:	1 x 1000 GB SATA III, 7200 RPM
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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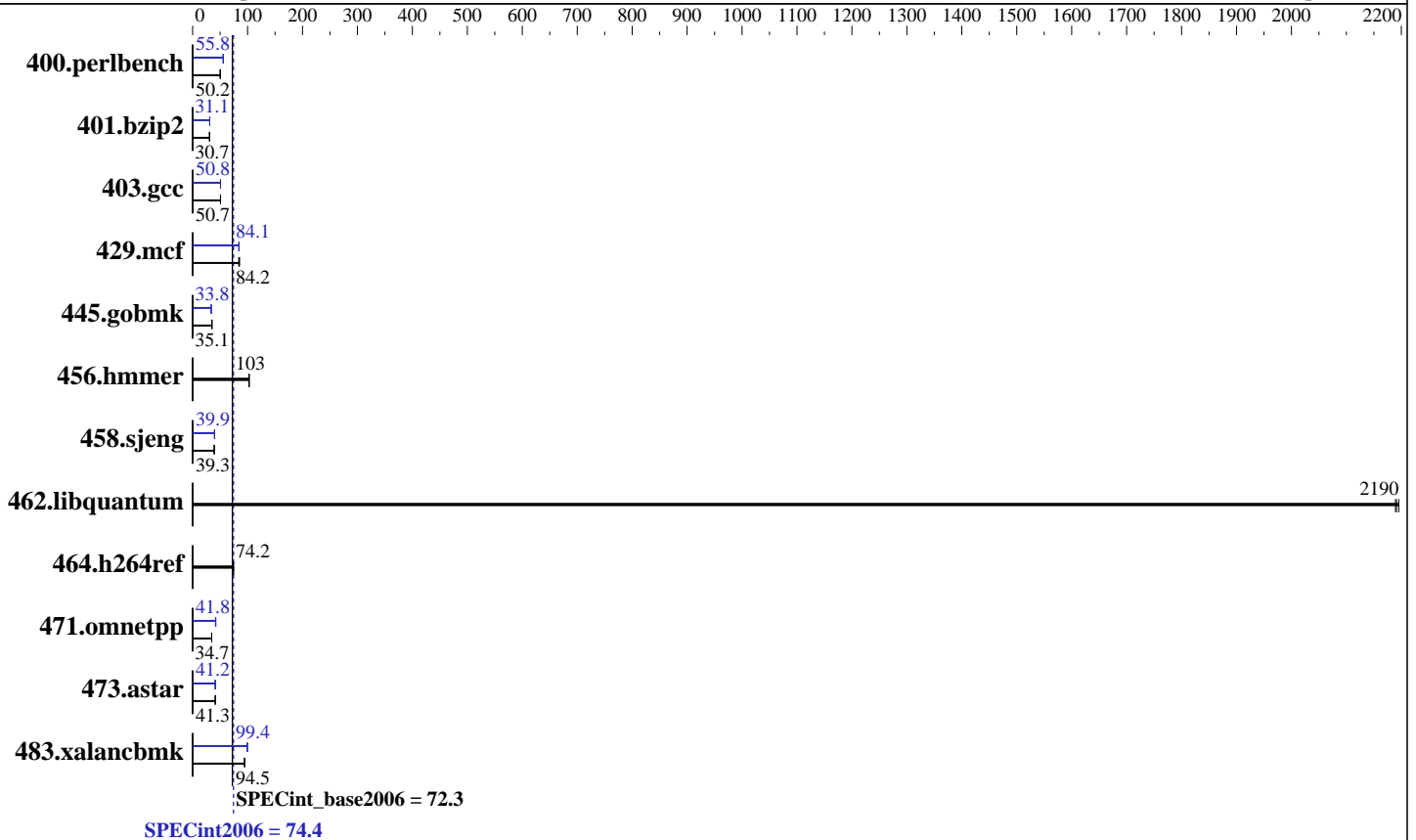SPECint2006 = 74.4

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	195	50.1	**195**	**50.2**	194	50.4	175	55.8	176	55.5	**175**	**55.8**
401.bzip2	314	30.7	**314**	**30.7**	313	30.8	310	31.1	**310**	**31.1**	310	31.1
403.gcc	158	50.8	**159**	**50.7**	159	50.6	159	50.7	**159**	**50.8**	158	50.8
429.mcf	108	84.2	107	85.5	**108**	**84.2**	108	84.1	**108**	**84.1**	108	84.5
445.gobmk	299	35.1	299	35.1	**299**	**35.1**	**311**	**33.8**	310	33.8	311	33.8
456.hmmer	90.9	103	90.7	103	**90.8**	**103**	90.9	103	90.7	103	**90.8**	**103**
458.sjeng	308	39.3	308	39.3	**308**	**39.3**	304	39.8	303	39.9	**303**	**39.9**
462.libquantum	**9.46**	**2190**	9.44	2200	9.46	2190	**9.46**	**2190**	9.44	2200	9.46	2190
464.h264ref	297	74.4	299	74.1	**298**	**74.2**	297	74.4	299	74.1	**298**	**74.2**
471.omnetpp	**180**	**34.7**	180	34.7	180	34.6	148	42.3	**150**	**41.8**	150	41.7
473.astar	171	41.1	**170**	**41.3**	170	41.3	171	41.0	170	41.3	**170**	**41.2**
483.xalancbmk	73.1	94.4	**73.0**	**94.5**	72.8	94.8	69.5	99.3	69.2	99.8	**69.4**	**99.4**

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:
Hyper-threading = Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Tue Dec 22 04:38:18 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) Core(TM) i7-6700 CPU @ 3.40GHz
      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:       65581696 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 localhost.localdomain 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 Dec 22 04:34

SPEC is set to: /home/cpu2006
   Filesystem              Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   850G  3.4G  846G   1% /home
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 12/01/2015
   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:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "4"
```

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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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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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