SPEC® CINT2006 Result

Supermicro

SuperServer 1027TR-TF
(X9DRT-F, Intel Xeon E5-2697 v2)

$SPECint®2006 = $ 60.0

$SPECint_base2006 = $ 55.6

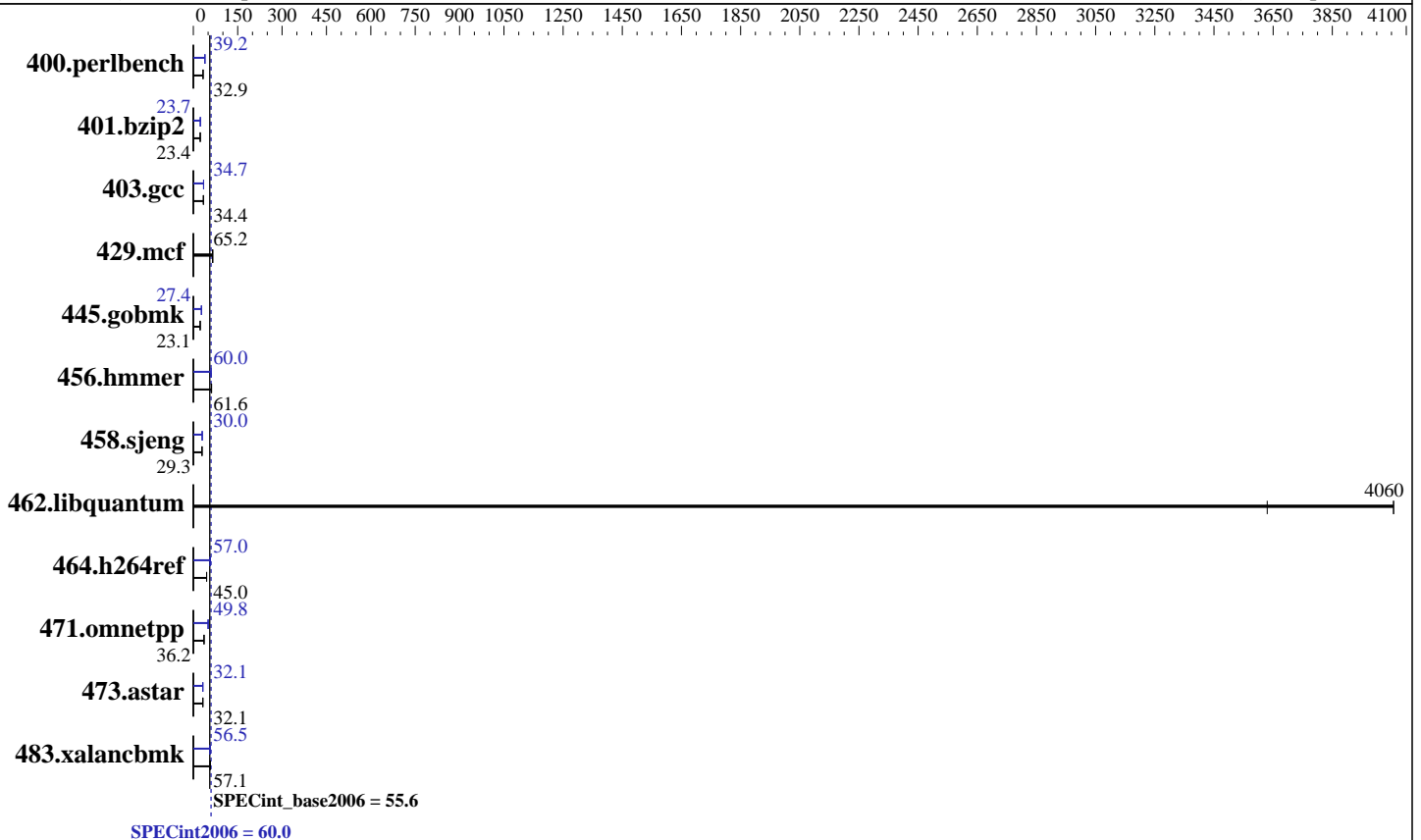|		
CPU2006 license: 001176	**Test date:**	Sep-2013
Test sponsor: Supermicro	**Hardware Availability:**	Sep-2013
Tested by: Supermicro	**Software Availability:**	Sep-2013

Benchmark results (bar chart scale 0 to 4100):

- **400.perlbench** 39.2 / 32.9
- **401.bzip2** 23.7 / 23.4
- **403.gcc** 34.7 / 34.4
- **429.mcf** 65.2
- **445.gobmk** 27.4 / 23.1
- **456.hmmer** 60.0 / 61.6
- **458.sjeng** 30.0 / 29.3
- **462.libquantum** 4060
- **464.h264ref** 57.0 / 45.0
- **471.omnetpp** 49.8 / 36.2
- **473.astar** 32.1 / 32.1
- **483.xalancbmk** 56.5 / 57.1

SPECint_base2006 = 55.6

SPECint2006 = 60.0

Hardware

CPU Name:	Intel Xeon E5-2697 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2700
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 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:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	1 x 400 GB SATA III, SSD
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.18.1.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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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	298	32.7	297	32.9	**297**	**32.9**	250	39.1	249	39.2	**249**	**39.2**
401.bzip2	415	23.3	**413**	**23.4**	413	23.4	407	23.7	407	23.7	**407**	**23.7**
403.gcc	234	34.4	239	33.7	**234**	**34.4**	232	34.7	232	34.7	**232**	**34.7**
429.mcf	**140**	**65.2**	140	65.0	138	65.9	**140**	**65.2**	140	65.0	138	65.9
445.gobmk	453	23.2	**454**	**23.1**	455	23.1	383	27.4	**383**	**27.4**	383	27.4
456.hmmer	151	61.7	**151**	**61.6**	154	60.5	**155**	**60.0**	155	60.0	156	59.8
458.sjeng	413	29.3	413	29.3	**413**	**29.3**	403	30.1	**403**	**30.0**	403	30.0
462.libquantum	5.11	4060	5.71	3630	**5.11**	**4060**	5.11	4060	5.71	3630	**5.11**	**4060**
464.h264ref	**492**	**45.0**	494	44.8	492	45.0	**388**	**57.0**	388	57.0	390	56.8
471.omnetpp	**173**	**36.2**	174	36.0	173	36.2	126	49.8	123	50.6	**125**	**49.8**
473.astar	218	32.1	**218**	**32.1**	218	32.2	219	32.0	218	32.2	**219**	**32.1**
483.xalancbmk	**121**	**57.1**	121	57.1	121	57.1	122	56.5	123	56.3	**122**	**56.5**

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

```
Sysinfo program /home/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on X9-CPU2006-2 Wed Sep 11 14:41:19 2013

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 E5-2697 v2 @ 2.70GHz
      2 "physical id"s (chips)
      24 "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 : 12
      siblings  : 12
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
```

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Platform Notes (Continued)

```
     cache size : 30720 KB

  From /proc/meminfo
     MemTotal:        66003860 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 X9-CPU2006-2 2.6.32-358.18.1.el6.x86_64 #1 SMP Wed Aug 28 09:02:47 CEST
     2013 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Sep 11 14:35

  SPEC is set to: /home/cpu2006
     Filesystem     Type     Size  Used Avail Use% Mounted on
     /dev/mapper/vg_x9cpu20062-lv_home
                    ext4     287G  4.2G  268G   2% /home

  Additional information from dmidecode:
    BIOS American Megatrends Inc. 3.0 09/11/2013
    Memory:
    1x   16 MB
    8x    8 GB
    8x Hynix Semiconductor HMT31GR7CFR4C-RD 8 GB 1866 MHz 1 rank
    1x Micron/Numonyx 25Q Series 16 MB 33 MHz

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
 OMP_NUM_THREADS = ""

  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>
```

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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:
    `-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32`

C++ benchmarks:
    `-xAVX -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`

464.h264ref: `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`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-xAVX(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: `-xAVX(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: `-xAVX -ipo -O3 -no-prec-div -inline-calloc`
`-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

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

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

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Peak Optimization Flags (Continued)

```
   458.sjeng: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
              -ansi-alias
```

C++ benchmarks:

```
  471.omnetpp: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
              -Wl,-z,muldefs -L/sh -lsmartheap64

 483.xalancbmk: -xAVX -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-revB.20130719.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-revB.20130719.xml

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

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