



SPEC® CINT2006 Result

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Supermicro

SuperServer 5017R-MTF (X9SRi-F, Intel Xeon E5-1620)

SPECint®2006 = 53.9

SPECint_base2006 = 51.3

CPU2006 license: 001176

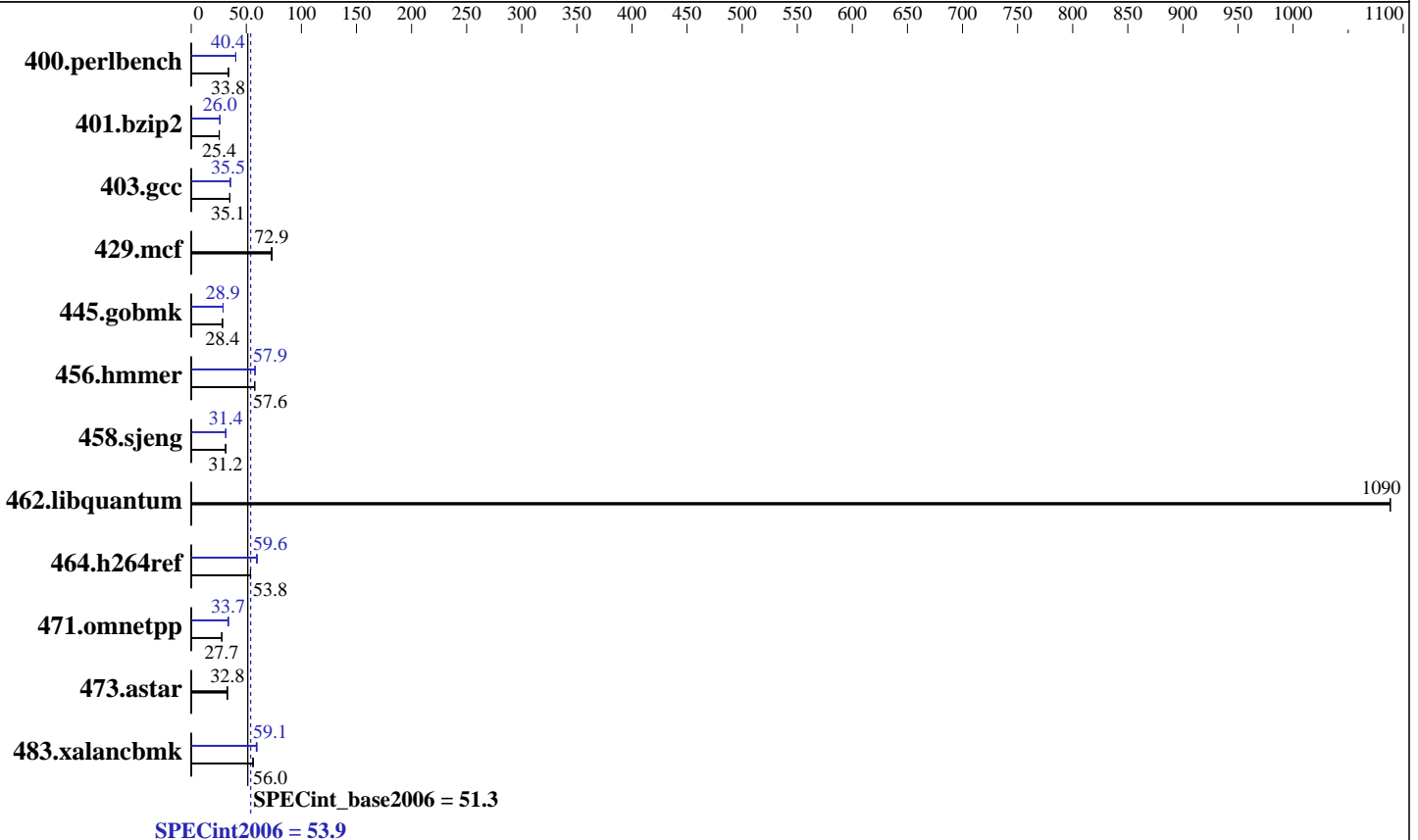
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2012

Hardware Availability: Mar-2011

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-1620
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
 CPU MHz: 3600
 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: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11-11-E2, ECC)
 Disk Subsystem: 1 x 2 TB SATA II, 7200 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86_64
 Compiler: C/C++; Version 12.1.0.225 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 V9.01



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Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|----------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 289 | 33.9 | <u>289</u> | <u>33.8</u> | 290 | 33.7 | <u>242</u> | 40.4 | <u>242</u> | <u>40.4</u> | 242 | 40.4 |
| 401.bzip2 | <u>380</u> | <u>25.4</u> | 379 | 25.5 | 380 | 25.4 | <u>371</u> | 26.0 | <u>371</u> | <u>26.0</u> | 371 | 26.0 |
| 403.gcc | 230 | 35.1 | <u>230</u> | <u>35.1</u> | 230 | 35.0 | <u>226</u> | 35.6 | <u>227</u> | <u>35.5</u> | 227 | 35.5 |
| 429.mcf | 124 | 73.5 | 125 | 72.8 | <u>125</u> | <u>72.9</u> | 124 | 73.5 | 125 | 72.8 | <u>125</u> | <u>72.9</u> |
| 445.gobmk | <u>370</u> | <u>28.4</u> | 370 | 28.4 | 370 | 28.4 | <u>363</u> | 28.9 | <u>363</u> | <u>28.9</u> | 363 | 28.9 |
| 456.hammer | <u>162</u> | <u>57.6</u> | 162 | 57.6 | 162 | 57.6 | <u>161</u> | <u>57.9</u> | 161 | 57.9 | 161 | 57.9 |
| 458.sjeng | <u>388</u> | <u>31.2</u> | 388 | 31.2 | 387 | 31.2 | <u>386</u> | 31.3 | 385 | 31.4 | <u>385</u> | <u>31.4</u> |
| 462.libquantum | <u>19.0</u> | <u>1090</u> | 19.0 | 1090 | 19.0 | 1090 | <u>19.0</u> | <u>1090</u> | 19.0 | 1090 | 19.0 | 1090 |
| 464.h264ref | <u>411</u> | <u>53.8</u> | 411 | 53.8 | 412 | 53.7 | <u>371</u> | <u>59.6</u> | 373 | 59.3 | 370 | 59.9 |
| 471.omnetpp | <u>226</u> | <u>27.7</u> | 226 | 27.7 | 225 | 27.8 | <u>185</u> | <u>33.7</u> | 188 | 33.3 | 185 | 33.9 |
| 473.astar | <u>214</u> | <u>32.8</u> | 216 | 32.5 | 213 | 33.0 | <u>214</u> | <u>32.8</u> | 216 | 32.5 | 213 | 33.0 |
| 483.xalancbmk | <u>123</u> | <u>56.0</u> | 123 | 56.0 | 122 | 56.4 | <u>115</u> | 59.8 | 117 | 59.1 | <u>117</u> | <u>59.1</u> |

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

Operating System Notes

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

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"
OMP_NUM_THREADS = "4"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64



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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/smartheap -lsmartheap64

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64



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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

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/smartheap -lsmartheap

```

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Peak Optimization Flags (Continued)

473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/smartheap -lsmartheap

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 04:44:13 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 May 2012.