SPEC® CINT2006 Result

Supermicro

SuperServer 8027R-7RFT+
(X9QR7-TF+ , Intel E5-4640 v2)

SPECint®_rate2006 = 1400

SPECint_rate_base2006 = 1360

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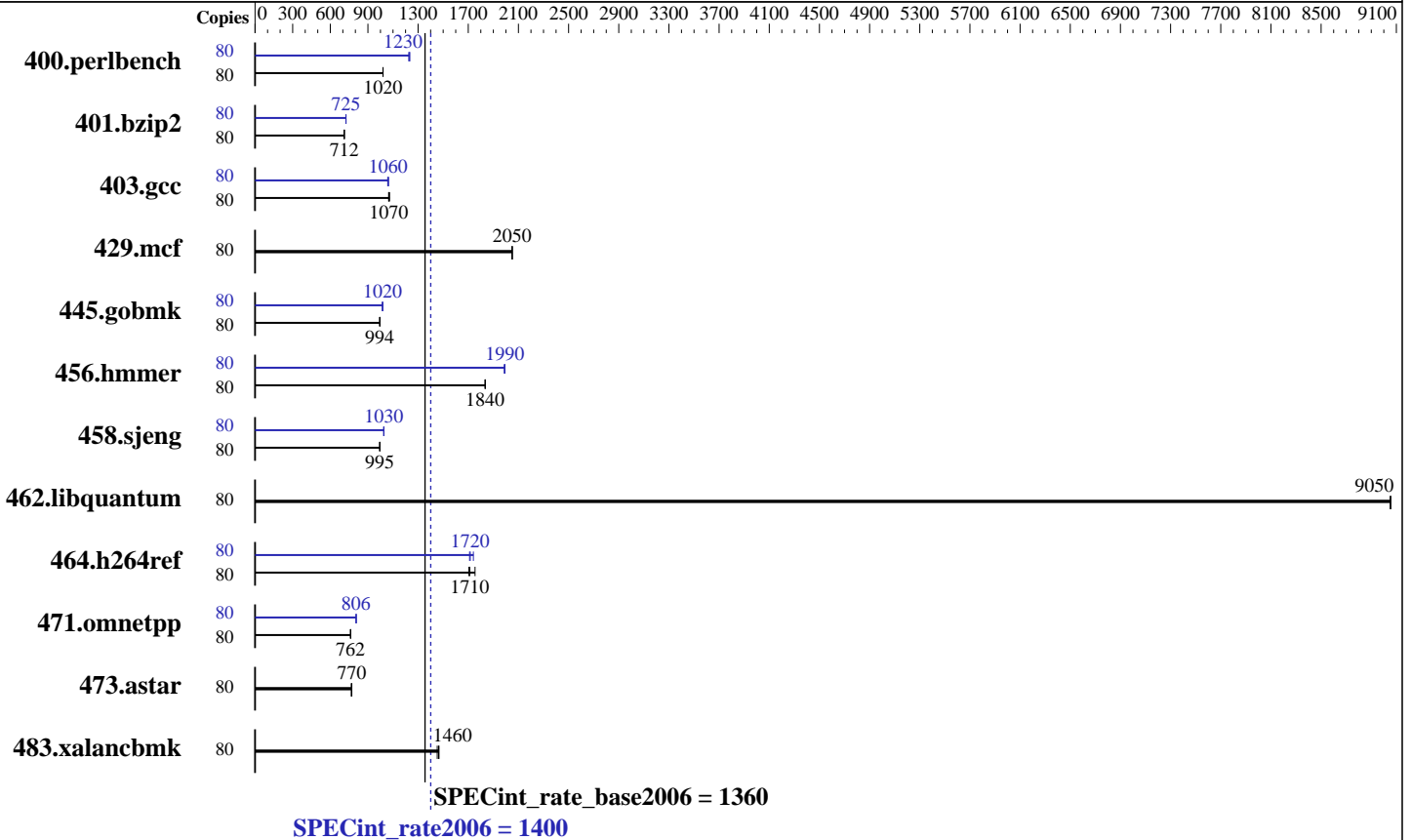**Test sponsor:** Supermicro
Tested by: Supermicro

Test date: Jul-2014
Hardware Availability: Aug-2013
Software Availability: Sep-2013

Copies 0 300 600 900 1300 1700 2100 2500 2900 3300 3700 4100 4500 4900 5300 5700 6100 6500 6900 7300 7700 8100 8500 9100

```
400.perlbench    80   1230
                 80   1020
401.bzip2        80   725
                 80   712
403.gcc          80   1060
                 80   1070
429.mcf          80   2050
445.gobmk        80   1020
                 80   994
456.hmmer        80   1990
                 80   1840
458.sjeng        80   1030
                 80   995
462.libquantum   80   9050
464.h264ref      80   1720
                 80   1710
471.omnetpp      80   806
                 80   762
473.astar        80   770
483.xalancbmk    80   1460
```

SPECint_rate_base2006 = 1360

SPECint_rate2006 = 1400

Hardware

CPU Name:	Intel Xeon E5-4640 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.70 GHz
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	40 cores, 4 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	1,2,4 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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx8 PC3-14900R-13, ECC)
Disk Subsystem:	1 x 512 GB SATA III SSD
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.5, Kernel 2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	766	1020	**766**	**1020**	767	1020	80	**635**	**1230**	634	1230	638	1230
401.bzip2	80	1086	711	1085	712	**1085**	**712**	80	**1065**	**725**	1065	725	1064	725
403.gcc	80	**604**	**1070**	604	1070	600	1070	80	609	1060	**606**	**1060**	605	1060
429.mcf	80	**356**	**2050**	356	2050	356	2050	80	**356**	**2050**	356	2050	356	2050
445.gobmk	80	845	993	**844**	**994**	842	996	80	**826**	**1020**	827	1010	824	1020
456.hmmer	80	407	1830	407	1840	**407**	**1840**	80	**375**	**1990**	376	1990	375	1990
458.sjeng	80	974	994	972	995	**973**	**995**	80	944	1030	**942**	**1030**	942	1030
462.libquantum	80	**183**	**9050**	183	9050	183	9050	80	**183**	**9050**	183	9050	183	9050
464.h264ref	80	1039	1700	1009	1750	**1034**	**1710**	80	**1032**	**1720**	1035	1710	1017	1740
471.omnetpp	80	657	761	656	762	**656**	**762**	80	620	806	**620**	**806**	620	806
473.astar	80	728	772	**729**	**770**	732	767	80	728	772	**729**	**770**	732	767
483.xalancbmk	80	376	1470	380	1450	**377**	**1460**	80	376	1470	380	1450	**377**	**1460**

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

Submit Notes

　The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl 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"

General Notes

　Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/SPEC-CPU/SPEC2006_v11/libs/32:/home/SPEC-CPU/SPEC2006_v11/libs/64:/home/SPEC-CPU/SPEC2006_v11/sh"

　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
Filesystem page cache cleared with:
echo 1>　　　/proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

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CPU2006 license: 001176

Test sponsor: Supermicro

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Base Compiler Invocation

C benchmarks:
    icc -m32

C++ benchmarks:
    icpc -m32

Base Portability Flags

    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
    -xSSE4.2 -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

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m32

    400.perlbench: icc -m64

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32

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CPU2006 license: 001176   **Test date:**   Jul-2014
Test sponsor: Supermicro   **Hardware Availability:** Aug-2013
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Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
   401.bzip2: -DSPEC_CPU_LP64
   456.hmmer: -DSPEC_CPU_LP64
   458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -auto-ilp32

   401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -opt-prefetch -auto-ilp32 -ansi-alias

     403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

     429.mcf: basepeak = yes

   445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
               -ansi-alias -opt-mem-layout-trans=3

   456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

   458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -unroll4 -auto-ilp32

462.libquantum: basepeak = yes

  464.h264ref: -xSSE4.2(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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
               -L/sh -lsmartheap

    473.astar: basepeak = yes
```

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Peak Optimization Flags (Continued)

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revD.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-revD.xml

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

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