SPEC® CINT2006 Result

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Oracle Corporation

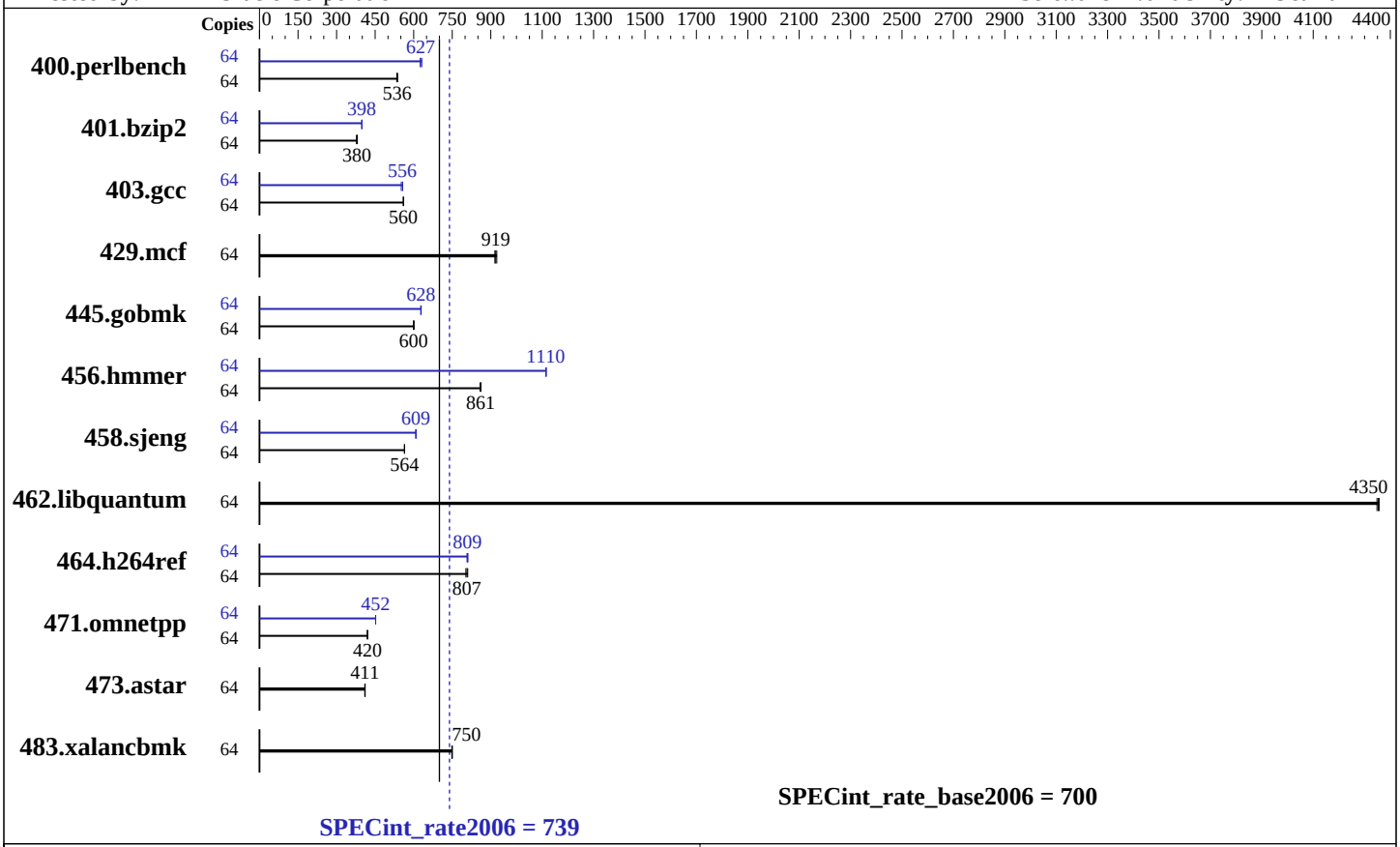
Sun Fire X4470 M2 (Intel Xeon E7-4820 2.0 GHz)

SPECint®_rate2006 = 739

SPECint_rate_base2006 = 700

CPU2006 license: 6
Test sponsor: Oracle Corporation
Tested by: Oracle Corporation

Test date: Dec-2011
Hardware Availability: Jun-2011
Software Availability: Oct-2011



Hardware

CPU Name:	Intel Xeon E7-4820
CPU Characteristics:	Intel Turbo Boost Technology up to 2.27 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	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:	18 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (64 x 4 GB 2Rx8 PC3L-10600R-9, ECC)
Disk Subsystem:	1 x 300 GB, SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Oracle Linux 6.1 kernel 2.6.32-100.34.1.el6uek.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 5 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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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	64	1170	534	1163	537	**1167**	**536**	64	990	632	1000	625	**997**	**627**
401.bzip2	64	1637	377	**1627**	**380**	1622	381	64	1553	398	**1550**	**398**	1547	399
403.gcc	64	919	560	921	560	**920**	**560**	64	924	557	**926**	**556**	934	552
429.mcf	64	632	923	637	916	**635**	**919**	64	632	923	637	916	**635**	**919**
445.gobmk	64	**1119**	**600**	1121	599	1116	602	64	1069	628	**1069**	**628**	1067	629
456.hmmer	64	696	858	**694**	**861**	693	862	64	**536**	**1110**	536	1110	535	1120
458.sjeng	64	1372	564	1373	564	**1372**	**564**	64	**1272**	**609**	1271	609	1273	608
462.libquantum	64	**305**	**4350**	304	4360	305	4350	64	**305**	**4350**	304	4360	305	4350
464.h264ref	64	**1754**	**807**	1764	803	1748	810	64	1754	807	1746	811	**1750**	**809**
471.omnetpp	64	953	420	**952**	**420**	952	420	64	**885**	**452**	885	452	885	452
473.astar	64	1093	411	**1094**	**411**	1097	410	64	1093	411	**1094**	**411**	1097	410
483.xalancbmk	64	589	750	**589**	**750**	590	748	64	589	750	**589**	**750**	590	748

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

Platform Notes

```
Default BIOS Settings were used.

Oracle's Sun Fire X4470 M2 is now known as the Sun Server X2-4.
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006v1.2/libs/32:/home/cpu2006v1.2/libs/64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

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/smartheap -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
```

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/smartheap -lsmartheap

473.astar: basepeak = yes

Continued on next page

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-ic12.1-official-linux64.20111122.html`
`http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml`
`http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.xml`

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