SPEC® CINT2006 Result

Oracle Corporation

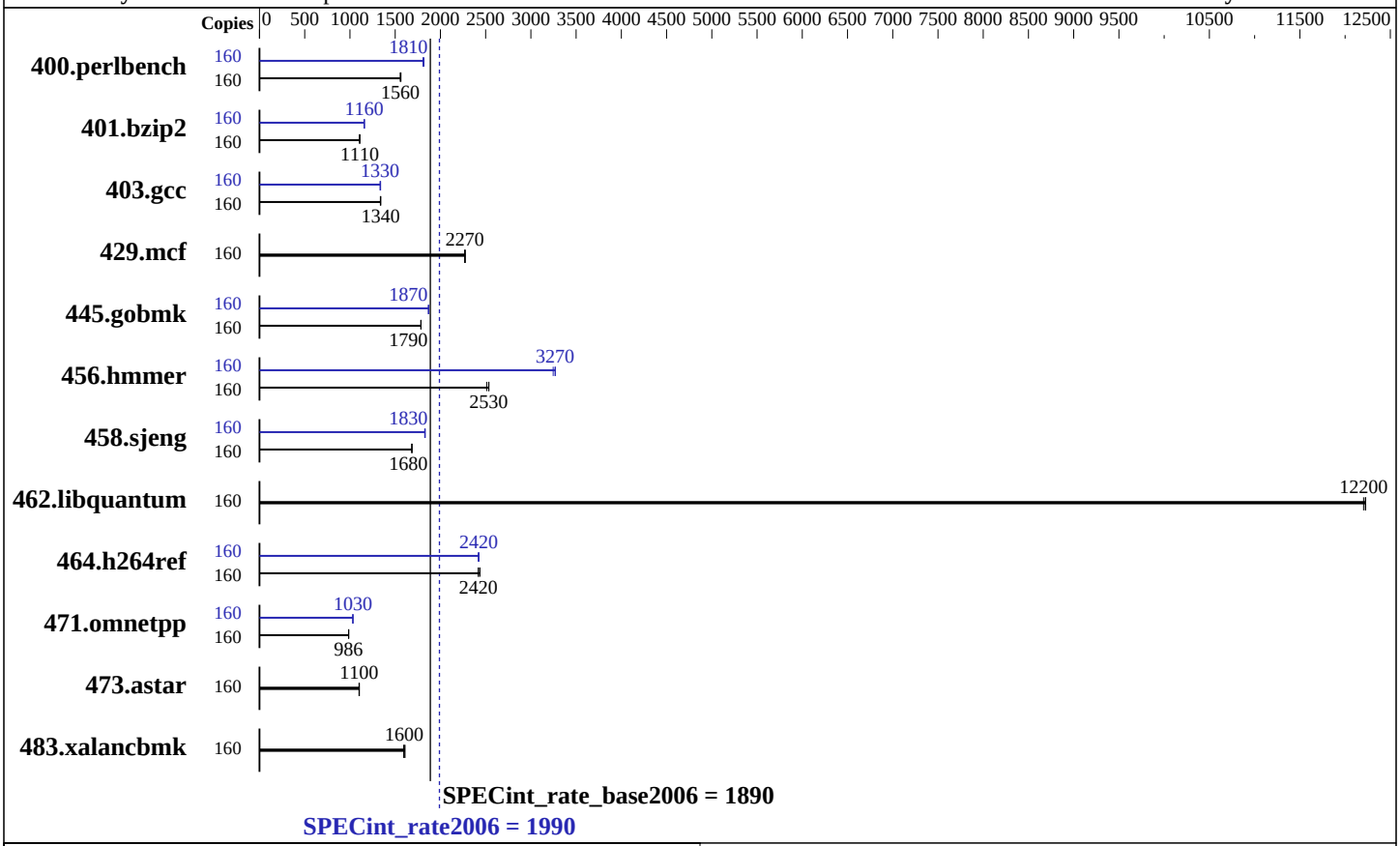
Sun Server X2-8 (Intel Xeon E7-8870 2.40 GHz)

SPECint®_rate2006 = 1990

SPECint_rate_base2006 = 1890

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

Test date: Nov-2012
Hardware Availability: Jul-2011
Software Availability: Dec-2011



Hardware

CPU Name:	Intel Xeon E7-8870
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	80 cores, 8 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	4,8 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:	512 GB (128 x 4 GB 2Rx8 PC3L-10600R-9, ECC, running at 1066 MHz and CL7)
Disk Subsystem:	1 x 300 GB, 10 K RPM, SAS
Other Hardware:	None

Software

Operating System:	Oracle Linux 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:	No
File System:	ext3
System State:	Run level 3 (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	160	1000	1560	**1003**	**1560**	1004	1560	160	**864**	**1810**	865	1810	860	1820
401.bzip2	160	1395	1110	1393	1110	**1393**	**1110**	160	1332	1160	**1333**	**1160**	1333	1160
403.gcc	160	961	1340	**962**	**1340**	964	1340	160	962	1340	**965**	**1330**	966	1330
429.mcf	160	**643**	**2270**	641	2270	643	2270	160	**643**	**2270**	641	2270	643	2270
445.gobmk	160	**940**	**1790**	940	1790	941	1780	160	898	1870	**898**	**1870**	899	1870
456.hmmer	160	589	2540	594	2510	**589**	**2530**	160	460	3250	457	3270	**457**	**3270**
458.sjeng	160	1149	1690	**1149**	**1680**	1150	1680	160	1057	1830	**1058**	**1830**	1060	1830
462.libquantum	160	271	12200	272	12200	**271**	**12200**	160	271	12200	272	12200	**271**	**12200**
464.h264ref	160	**1462**	**2420**	1453	2440	1464	2420	160	1460	2430	1464	2420	**1461**	**2420**
471.omnetpp	160	1014	986	1016	984	**1014**	**986**	160	968	1030	**968**	**1030**	969	1030
473.astar	160	1017	1100	1020	1100	**1020**	**1100**	160	1017	1100	1020	1100	**1020**	**1100**
483.xalancbmk	160	686	1610	**690**	**1600**	692	1590	160	686	1610	**690**	**1600**	692	1590

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"
```

Platform Notes

```
Default BIOS Settings were used.
 Sysinfo program /speccpu/cpu2006v1.2/config/sysinfo.rev6800
 $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on x4800-001 Thu Nov  1 16:08:10 2012

 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 E7- 8870 @ 2.40GHz
       8 "physical id"s (chips)
       160 "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 : 10
```

Continued on next page

Platform Notes (Continued)

```
        siblings  : 20
        physical 0: cores 0 1 2 8 9 16 17 18 24 25
        physical 1: cores 0 1 2 8 9 16 17 18 24 25
        physical 2: cores 0 1 2 8 9 16 17 18 24 25
        physical 3: cores 0 1 2 8 9 16 17 18 24 25
        physical 4: cores 0 1 2 8 9 16 17 18 24 25
        physical 5: cores 0 1 2 8 9 16 17 18 24 25
        physical 6: cores 0 1 2 8 9 16 17 18 24 25
        physical 7: cores 0 1 2 8 9 16 17 18 24 25
     cache size : 30720 KB

  From /proc/meminfo
     MemTotal:       529254884 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Oracle Linux Server release 6.2

  From /etc/*release* /etc/*version*
     oracle-release: Oracle Linux Server release 6.2
     redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
     system-release: Oracle Linux Server release 6.2
     system-release-cpe: cpe:/o:oracle:oracle_linux:6server:ga:server

  uname -a:
     Linux x4800-001 2.6.32-220.el6.x86_64 #1 SMP Wed Dec 7 10:41:06 EST 2011
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Nov 1 15:47

  SPEC is set to: /speccpu/cpu2006v1.2
     Filesystem     Type    Size  Used Avail Use% Mounted on
     /dev/sda5      ext3    271G   14G  244G   6% /


  (End of data from sysinfo program)
```

General Notes

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

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

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`

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

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