SPEC® CINT2006 Result

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Oracle Corporation

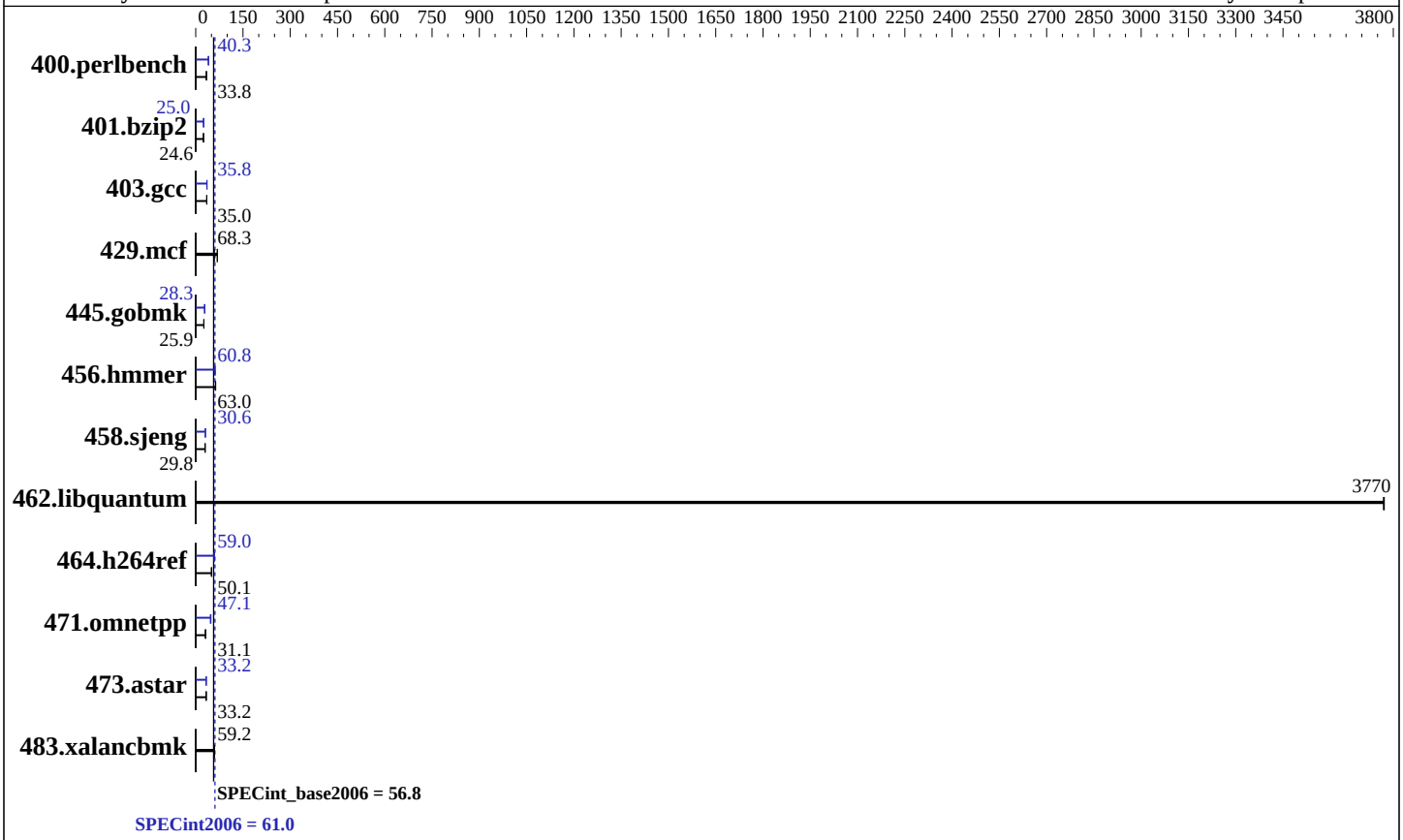
Sun Fire X4-2L (Intel Xeon E5-2690 v2 3.0GHz)

SPECint®2006 = 61.0

SPECint_base2006 = 56.8

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

Test date: Nov-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013



Hardware

CPU Name:	Intel Xeon E5-2690 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 cores/chip
CPU(s) orderable:	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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 600 GB SAS, 10K RPM
Other Hardware:	None

Software

Operating System:	Oracle Linux 6.4 2.6.32-358.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 5 (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	289	33.8	289	33.8	**289**	**33.8**	242	40.4	**242**	**40.3**	243	40.3
401.bzip2	**392**	**24.6**	392	24.6	392	24.6	387	25.0	**387**	**25.0**	387	25.0
403.gcc	**230**	**35.0**	229	35.1	230	35.0	225	35.8	**225**	**35.8**	229	35.1
429.mcf	**134**	**68.3**	133	68.6	154	59.3	**134**	**68.3**	133	68.6	154	59.3
445.gobmk	405	25.9	407	25.8	**406**	**25.9**	371	28.3	371	28.3	**371**	**28.3**
456.hmmer	**148**	**63.0**	150	62.3	147	63.5	151	61.6	**153**	**60.8**	154	60.8
458.sjeng	406	29.8	**407**	**29.8**	407	29.8	396	30.6	**396**	**30.6**	396	30.6
462.libquantum	5.50	3770	5.49	3770	**5.50**	**3770**	5.50	3770	5.49	3770	**5.50**	**3770**
464.h264ref	442	50.1	**441**	**50.1**	441	50.1	375	59.0	375	59.0	**375**	**59.0**
471.omnetpp	200	31.2	204	30.7	**201**	**31.1**	**133**	**47.1**	129	48.3	134	46.8
473.astar	**211**	**33.2**	211	33.3	212	33.1	211	33.3	212	33.1	**211**	**33.2**
483.xalancbmk	**117**	**59.2**	117	59.2	117	59.0	**117**	**59.2**	117	59.2	117	59.0

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

```
    Hyper-Threading (HT) Technology was Disabled
    Energy Performance set to Performance

Sysinfo program /home/cpu2006v1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on bur408-156 Mon Nov  4 13:51:48 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 E5-2690 v2 @ 3.00GHz
      2 "physical id"s (chips)
      20 "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  : 10
        physical 0: cores 0 1 2 3 4 8 9 10 11 12
        physical 1: cores 0 1 2 3 4 8 9 10 11 12
     cache size : 25600 KB

  From /proc/meminfo
     MemTotal:       264475400 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Oracle Linux Server release 6.4

  From /etc/*release* /etc/*version*
     oracle-release: Oracle Linux Server release 6.4
     redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
     system-release: Oracle Linux Server release 6.4
     system-release-cpe: cpe:/o:oracle:oracle_linux:6server:ga:server

  uname -a:
     Linux bur408-156 2.6.32-358.el6.x86_64 #1 SMP Fri Feb 22 13:35:02 PST 2013
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 5 Nov 4 13:49

  SPEC is set to: /home/cpu2006v1.2
     Filesystem     Type    Size  Used Avail Use% Mounted on
     /dev/mapper/vg_bur408156-lv_home
                    ext4    497G  5.0G  467G   2% /home

  Additional information from dmidecode:
    BIOS American Megatrends Inc. 26010601 09/18/2013
    Memory:
     16x   16 GB
     16x Samsung M393B2G70BH0-YK0 16 GB 1600 MHz 1 rank

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,scatter"
 LD_LIBRARY_PATH = "/home/cpu2006v1.2/libs/32:/home/cpu2006v1.2/libs/64:/home/cpu2006v1.2/sh"
 OMP_NUM_THREADS = "20"

  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>
```

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
```

Continued on next page

Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m64`

471.omnetpp: `icpc -m32`

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_LP64 -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`

Continued on next page

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: 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/Oracle-platform-x86_64.CPUv1.2-RevA.20120425.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/Oracle-platform-x86_64.CPUv1.2-RevA.20120425.xml

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