SPEC® CINT2006 Result

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Oracle Corporation

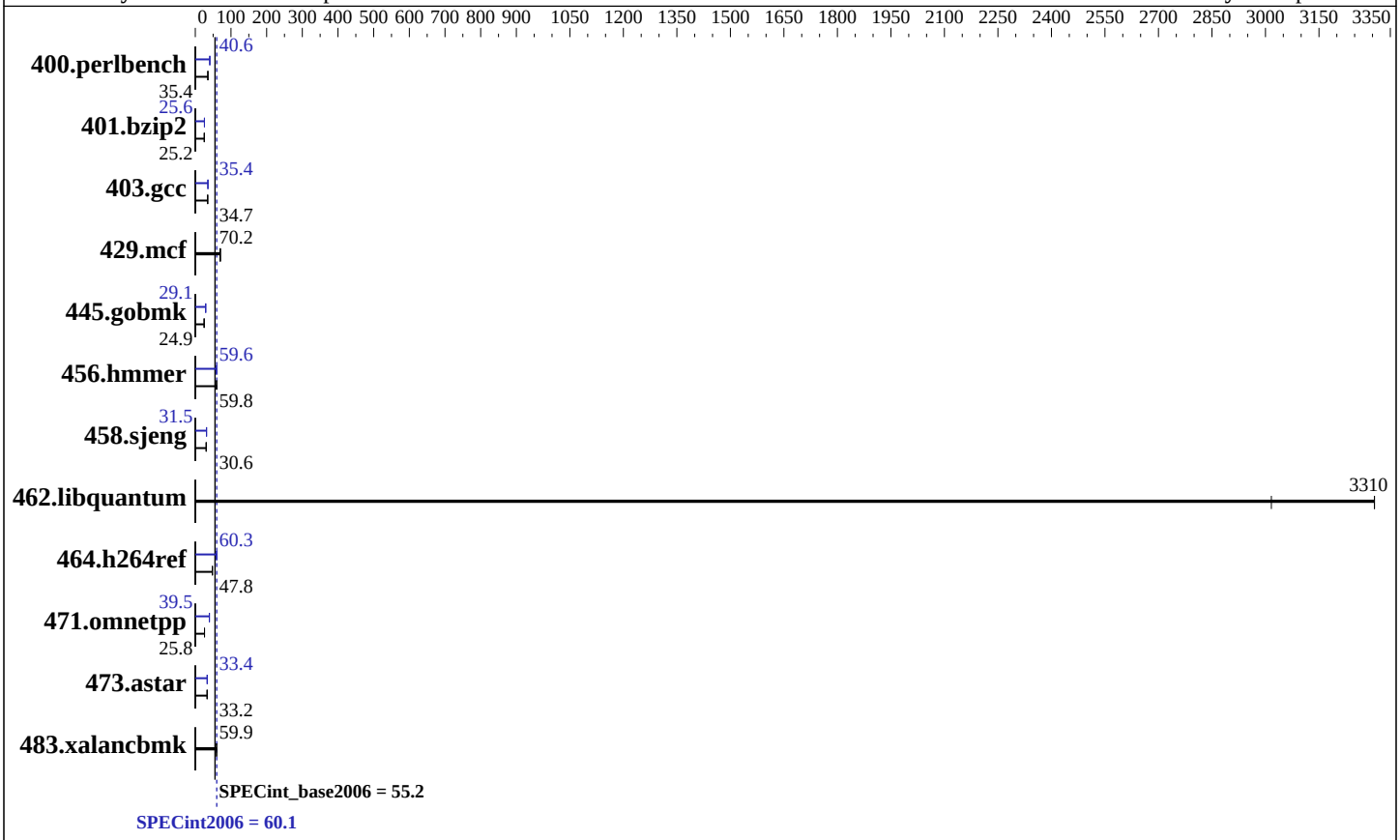
Sun Server X3-2L (Intel Xeon E5-2690 2.9GHz)

SPECint®2006 = 60.1

SPECint_base2006 = 55.2

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

Test date: Oct-2013
Hardware Availability: Apr-2012
Software Availability: Sep-2013



Hardware

CPU Name:	Intel Xeon E5-2690
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	2900
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip
CPU(s) orderable:	1 or 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:	20 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 300 GB 10K RPM SAS
Other Hardware:	None

Software

Operating System:	Oracle Linux 6.1 2.6.32-131.0.15.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (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	279	35.1	276	35.4	**276**	**35.4**	240	40.8	**240**	**40.6**	241	40.6
401.bzip2	382	25.2	**382**	**25.2**	382	25.2	376	25.6	**376**	**25.6**	376	25.7
403.gcc	232	34.7	**232**	**34.7**	232	34.6	228	35.4	**227**	**35.4**	227	35.4
429.mcf	129	70.6	132	69.1	**130**	**70.2**	129	70.6	132	69.1	**130**	**70.2**
445.gobmk	422	24.8	421	24.9	**421**	**24.9**	**361**	**29.1**	361	29.1	361	29.1
456.hmmer	156	59.9	156	59.7	**156**	**59.8**	**157**	**59.6**	156	59.8	157	59.5
458.sjeng	396	30.6	**395**	**30.6**	395	30.6	**385**	**31.5**	385	31.4	385	31.5
462.libquantum	6.87	3020	**6.27**	**3310**	6.27	3310	6.87	3020	**6.27**	**3310**	6.27	3310
464.h264ref	**463**	**47.8**	464	47.7	460	48.1	367	60.3	**367**	**60.3**	374	59.1
471.omnetpp	242	25.9	**242**	**25.8**	242	25.8	159	39.2	**158**	**39.5**	158	39.7
473.astar	210	33.4	**211**	**33.2**	212	33.1	**210**	**33.4**	212	33.2	209	33.7
483.xalancbmk	115	60.0	121	56.9	**115**	**59.9**	115	60.0	121	56.9	**115**	**59.9**

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

```
Default BIOS Settings were used, except:
  Hyper-Threading (HT) Technology was Disabled
  Energy Performance set to Performance

Sysinfo program /data1/cpu2006v1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on x3-2l-080 Thu Oct 31 16:55:19 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 0 @ 2.90GHz
      2 "physical id"s (chips)
      16 "processors"
   cores, siblings (Caution: counting these is hw and system dependent.  The
   following excerpts from /proc/cpuinfo might not be reliable.  Use with
   caution.)
```

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Platform Notes (Continued)

```
        cpu cores : 8
        siblings  : 8
        physical 0: cores 0 1 2 3 4 5 6 7
        physical 1: cores 0 1 2 3 4 5 6 7
     cache size : 20480 KB

  From /proc/meminfo
     MemTotal:       264542148 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Oracle Linux Server release 6.1

  From /etc/*release* /etc/*version*
     oracle-release: Oracle Linux Server release 6.1
     redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
     system-release: Oracle Linux Server release 6.1
     system-release-cpe: cpe:/o:oracle:oracle_linux:6server:ga:server

  uname -a:
     Linux x3-2l-080 2.6.32-131.0.15.el6.x86_64 #1 SMP Fri May 20 15:04:03 EDT
     2011 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Oct 31 15:35

  SPEC is set to: /data1/cpu2006v1.2
     Filesystem     Type    Size  Used Avail Use% Mounted on
     /dev/sda5      ext3    269G   18G  237G   7% /

  Additional information from dmidecode:
    BIOS American Megatrends Inc. 18021300 06/19/2012
    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 = "/data1/cpu2006v1.2/libs/32:/data1/cpu2006v1.2/libs/64:/data1/cpu2006v1.2/sh"
 OMP_NUM_THREADS = "16"

  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
```

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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

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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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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 17:53:59 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 November 2013.