



SPEC® CINT2006 Result

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Oracle Corporation

SPECint®2006 = 32.4

Sun Fire X4170 M2 (Intel Xeon L5640 2.27 GHz)

SPECint_base2006 = 29.9

CPU2006 license: 6

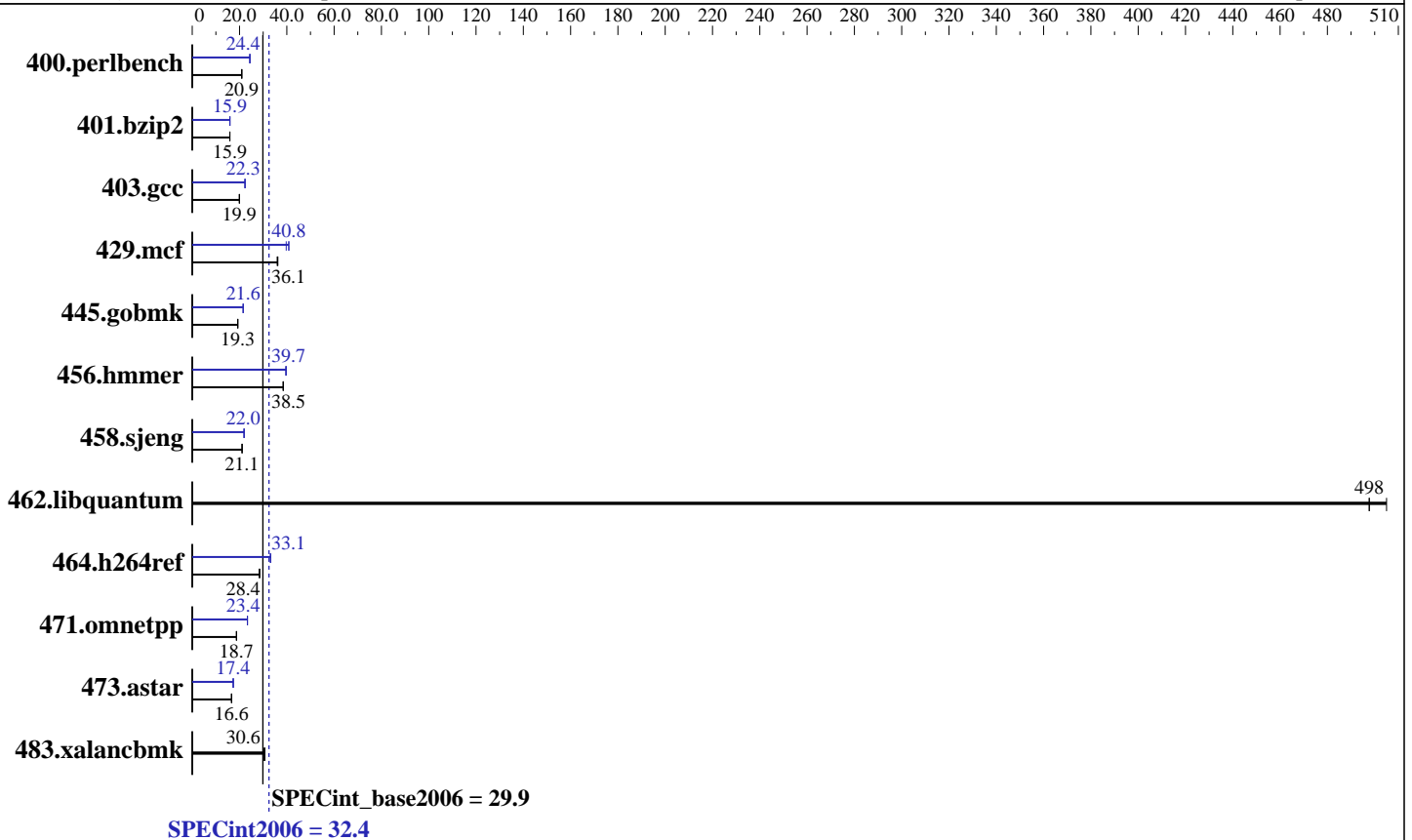
Test date: Sep-2010

Test sponsor: Oracle Corporation

Hardware Availability: Jun-2010

Tested by: Oracle Corporation

Software Availability: Apr-2010



Hardware

CPU Name: Intel Xeon L5640
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2267
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 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: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 1 x 146 GB SAS, 10000 RPM
 Other Hardware: None

Software

Operating System: Oracle Enterprise Linux Server release 5.5 kernel 2.6.18-194.el5
 Compiler: Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: 1_cproc_p_11.1.064
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	468	20.9	466	21.0	466	20.9	401	24.4	401	24.3	400	24.4
401.bzip2	607	15.9	605	15.9	607	15.9	605	16.0	607	15.9	606	15.9
403.gcc	403	20.0	404	19.9	404	19.9	361	22.3	361	22.3	360	22.3
429.mcf	252	36.2	254	35.9	252	36.1	223	40.8	229	39.7	223	40.8
445.gobmk	545	19.3	544	19.3	545	19.2	487	21.6	487	21.5	487	21.6
456.hammer	242	38.6	242	38.5	243	38.4	235	39.7	236	39.6	235	39.7
458.sjeng	575	21.1	573	21.1	574	21.1	550	22.0	553	21.9	551	22.0
462.libquantum	41.6	498	41.0	505	41.6	498	41.6	498	41.0	505	41.6	498
464.h264ref	775	28.6	779	28.4	781	28.3	667	33.2	669	33.1	669	33.1
471.omnetpp	334	18.7	335	18.7	333	18.8	268	23.4	268	23.3	268	23.4
473.astar	423	16.6	420	16.7	423	16.6	406	17.3	403	17.4	404	17.4
483.xalancbmk	225	30.6	227	30.4	225	30.7	225	30.6	227	30.4	225	30.7

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

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter

Platform Notes

Load Default BIOS Settings and then change the following
Data Reuse Optimization Disabled
Hardware Prefetch Enabled
Adjacent Cache Line Prefetch Enabled
L1 Data Prefetch Enabled

General Notes

This result is measured on a Sun Fire X4170 M2 server. The Sun Fire X4170 M2 and the Sun Fire X4270 M2 are electronically equivalent.

Base Compiler Invocation

C benchmarks:
icc -m64

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Base Compiler Invocation (Continued)

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.hmmmer: -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:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L(path to library) -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

400.perlbench: icc -m32

429.mcf: icc -m32

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Peak Compiler Invocation (Continued)

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`

456.hmmr: `-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: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -ansi-alias -opt-prefetch`

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

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-alloc -opt-malloc-options=3 -auto-ilp32`

429.mcf: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2 -ipo -no-prec-div -ansi-alias`

456.hmmr: `-xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -auto-ilp32`

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

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Peak Optimization Flags (Continued)

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) -static(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(path to library) -lsmartheap

473.astar: -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=routine -Wl,-z,muldefs
-L(path to library) -lsmartheap64

483.xalanbmk: 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-ic11.1-linux64-revE-pathfix-smartheap.20101027.html>
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.20101027.html

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE-pathfix-smartheap.20101027.xml>
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.20101027.xml

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For other inquiries, please contact webmaster@spec.org.

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