



SPEC[®] CINT2006 Result

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Oracle Corporation

SPECint[®]_rate2006 = 223

Sun Fire X4270 M2 (Intel Xeon E5620 2.4GHz)

SPECint_rate_base2006 = 210

CPU2006 license: 6

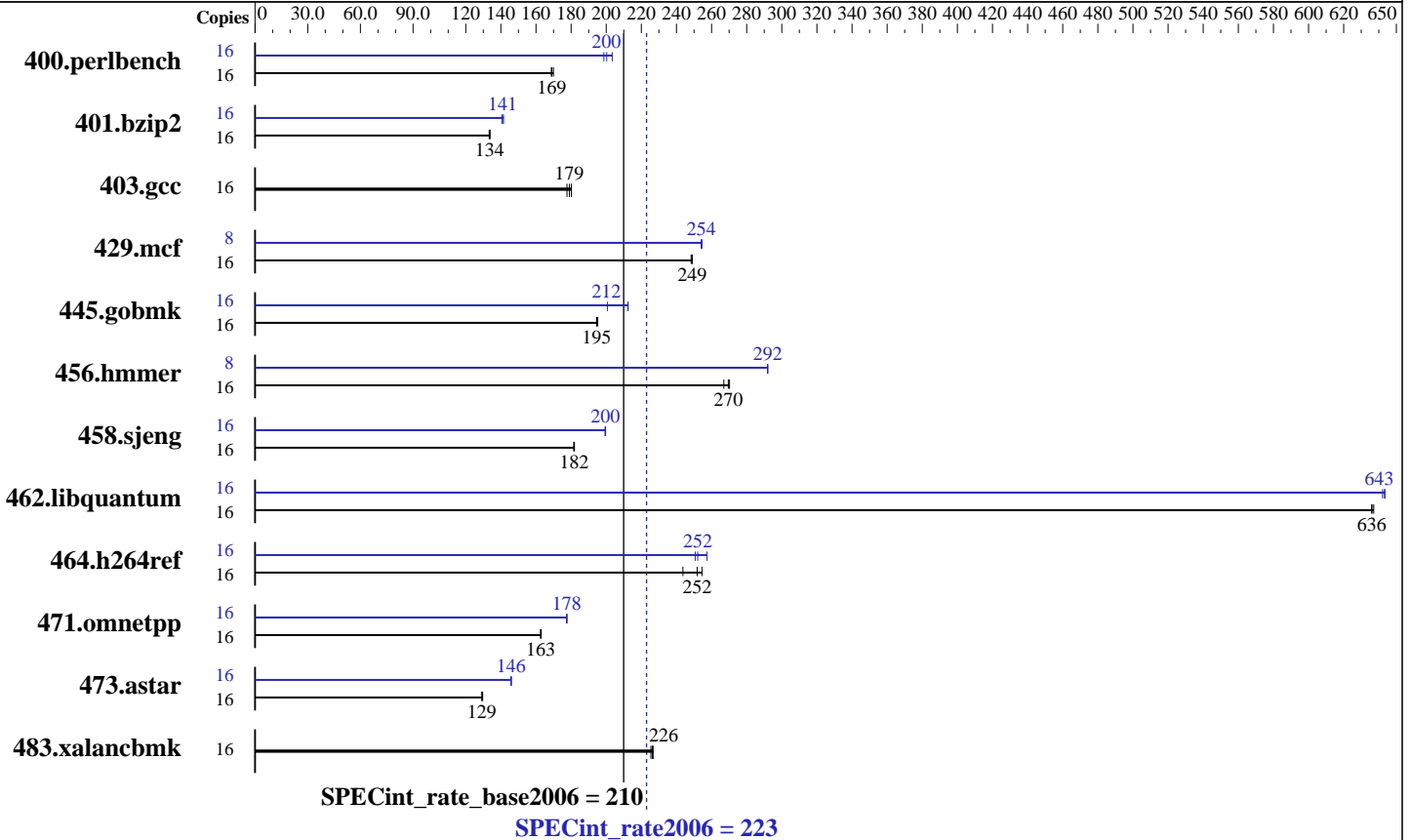
Test sponsor: Oracle Corporation

Tested by: Oracle Corporation

Test date: Sep-2010

Hardware Availability: Jun-2010

Software Availability: Apr-2010



Hardware

CPU Name: Intel Xeon E5620
 CPU Characteristics: Intel Turbo Boost Technology up to 2.66 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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, ECC, running at 1066 MHz and CL9)
 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: l_cproc_p_11.1.064
 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 V8.1 Binutils 2.18.50.0.7.20080502



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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	16	920	170	927	169	<u>925</u>	<u>169</u>	16	<u>781</u>	<u>200</u>	787	199	768	203
401.bzip2	16	<u>1155</u>	<u>134</u>	1154	134	1158	133	16	<u>1095</u>	<u>141</u>	1091	142	1098	141
403.gcc	16	715	180	<u>719</u>	<u>179</u>	725	178	16	715	180	<u>719</u>	<u>179</u>	725	178
429.mcf	16	588	248	<u>586</u>	<u>249</u>	586	249	8	287	254	<u>287</u>	<u>254</u>	287	254
445.gobmk	16	<u>862</u>	<u>195</u>	860	195	863	194	16	836	201	<u>791</u>	<u>212</u>	790	212
456.hammer	16	552	270	559	267	<u>554</u>	<u>270</u>	8	256	292	<u>256</u>	<u>292</u>	256	292
458.sjeng	16	1064	182	<u>1065</u>	<u>182</u>	1067	181	16	<u>970</u>	<u>200</u>	970	200	971	199
462.libquantum	16	520	637	<u>521</u>	<u>636</u>	521	636	16	516	642	515	643	<u>515</u>	<u>643</u>
464.h264ref	16	1391	255	<u>1406</u>	<u>252</u>	1453	244	16	<u>1404</u>	<u>252</u>	1376	257	1412	251
471.omnetpp	16	614	163	615	163	<u>614</u>	<u>163</u>	16	<u>563</u>	<u>178</u>	564	177	563	178
473.astar	16	869	129	<u>869</u>	<u>129</u>	866	130	16	<u>770</u>	<u>146</u>	771	146	769	146
483.xalancbmk	16	487	227	490	225	<u>488</u>	<u>226</u>	16	487	227	490	225	<u>488</u>	<u>226</u>

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 to invoke the command numactl to bind copies to the cores. (For details, please see the config file.)

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

Load Default BIOS Settings and then change the following
C-State Disabled
Data Reuse Optimization Disabled
All prefetches 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 -m32

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Base Compiler Invocation (Continued)

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 -static -opt-prefetch

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

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

462.libquantum: icc -m64

C++ benchmarks (except as noted below):
icpc -m32

473.astar: icpc -m64



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Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
 401.bzip2: -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_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

401.bzip2: -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) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: basepeak = yes

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.hmmer: -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 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
 -opt-prefetch

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

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Peak Optimization Flags (Continued)

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

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

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