



SPEC® CINT2006 Result

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Oracle Corporation

SPECint®_rate2006 = 391

Sun Fire X4170 M2 (Intel Xeon X5675 3.06 GHz)

SPECint_rate_base2006 = 367

CPU2006 license: 6

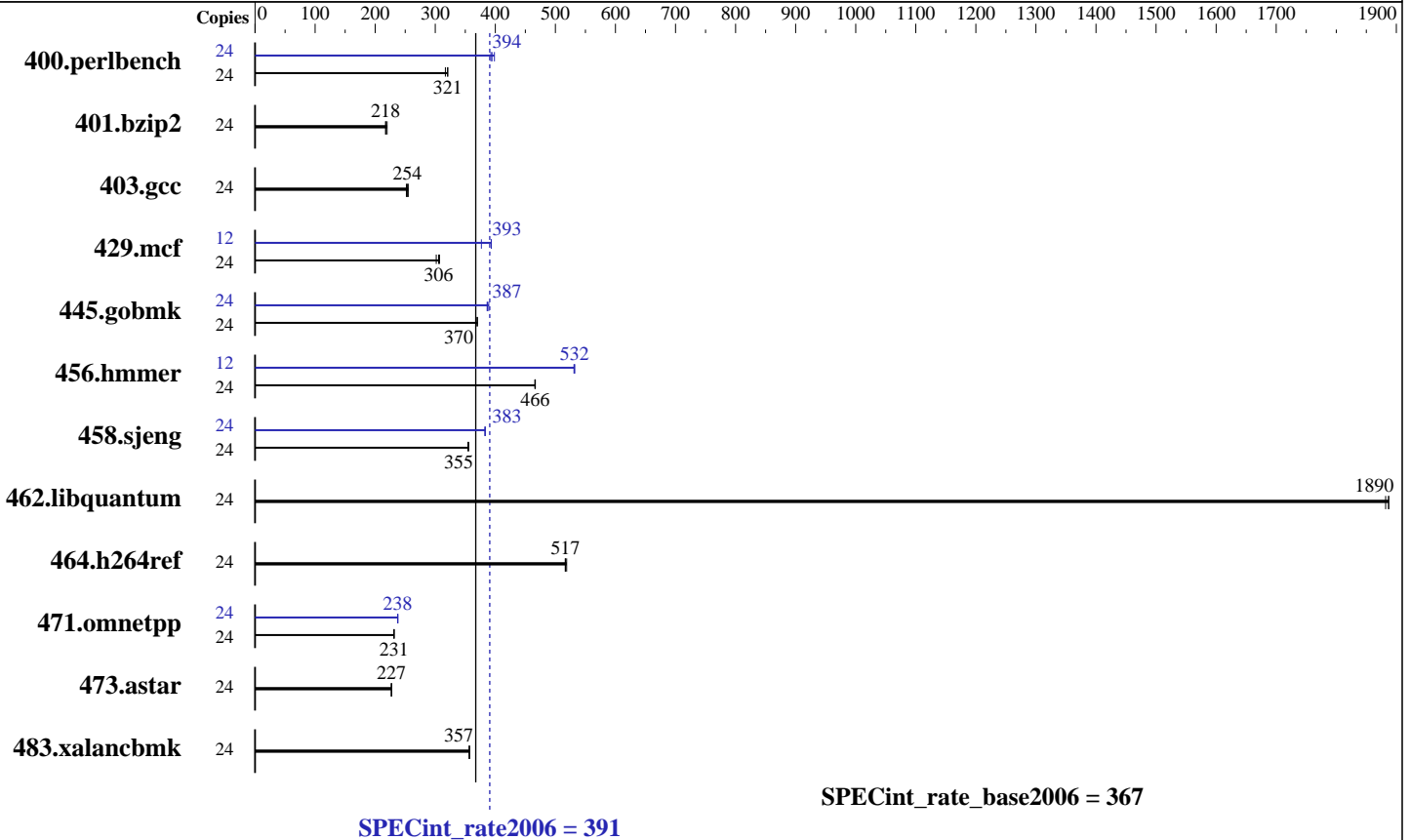
Test date: May-2011

Test sponsor: Oracle Corporation

Hardware Availability: Mar-2011

Tested by: Oracle Corporation

Software Availability: Nov-2010



Hardware

CPU Name: Intel Xeon X5675
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
 CPU MHz: 3067
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 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 300 GB 10000 RPM SAS2
 Other Hardware: None

Software

Operating System: Oracle Linux 5.5
 kernel 2.6.18-194.el5
 Compiler: Intel C++ Compiler XE for applications running on IA-32
 Version 12.0.1.116 Build 20101116
 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	24	740	317	731	321	<u>731</u>	<u>321</u>	24	597	393	<u>594</u>	<u>394</u>	588	399
401.bzip2	24	1053	220	1065	217	<u>1065</u>	<u>218</u>	24	1053	220	1065	217	<u>1065</u>	<u>218</u>
403.gcc	24	758	255	<u>761</u>	<u>254</u>	767	252	24	758	255	<u>761</u>	<u>254</u>	767	252
429.mcf	24	726	302	<u>716</u>	<u>306</u>	713	307	12	290	377	<u>278</u>	<u>393</u>	278	393
445.gobmk	24	<u>681</u>	<u>370</u>	684	368	680	370	24	652	386	647	389	<u>651</u>	<u>387</u>
456.hammer	24	<u>480</u>	<u>466</u>	480	467	481	466	12	211	531	<u>211</u>	<u>532</u>	210	532
458.sjeng	24	817	355	<u>818</u>	<u>355</u>	819	355	24	<u>758</u>	<u>383</u>	758	383	758	383
462.libquantum	24	<u>264</u>	<u>1890</u>	264	1890	264	1880	24	<u>264</u>	<u>1890</u>	264	1890	264	1880
464.h264ref	24	1028	516	<u>1028</u>	<u>517</u>	1024	519	24	1028	516	<u>1028</u>	<u>517</u>	1024	519
471.omnetpp	24	<u>648</u>	<u>231</u>	648	231	648	231	24	631	238	631	238	<u>631</u>	<u>238</u>
473.astar	24	742	227	741	227	<u>742</u>	<u>227</u>	24	742	227	741	227	<u>742</u>	<u>227</u>
483.xalancbmk	24	<u>464</u>	<u>357</u>	464	357	465	356	24	<u>464</u>	<u>357</u>	464	357	465	356

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.
numactl was used to bind copies to the cores

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
Hugepages was enabled with the following:
'nodev /mnt/hugepages hugetlbfs defaults 0 0' added to /etc/fstab
echo 10800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so

Platform Notes

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

General Notes

Binaries were compiled on RHEL5.5 with Binutils binutils-2.17.50.0.6-14.el5
This result is measured on Sun Fire X4170 M2 server.
Note that the Sun Fire X4170 M2 server and Sun Fire X4270 M2 server are electrically equivalent.



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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
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/smartheap -lsmartheap
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

400.perlbench: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32



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Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
 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)
 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

401.bzip2: basepeak = yes

403.gcc: basepeak = yes

429.mcf: -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 -auto-ilp32

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
 -ansi-alias -auto-ilp32

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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
 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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

483.xalancbmk: basepeak = yes



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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-ic12.0-linux64-revB.html>

http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.20110622.html

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.20110622.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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