



# SPEC® CINT2006 Result

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## Oracle Corporation

SPECint®\_rate2006 = 391

Sun Fire X4270 M2 (Intel Xeon X5675 3.06 GHz)

SPECint\_rate\_base2006 = 367

CPU2006 license: 6

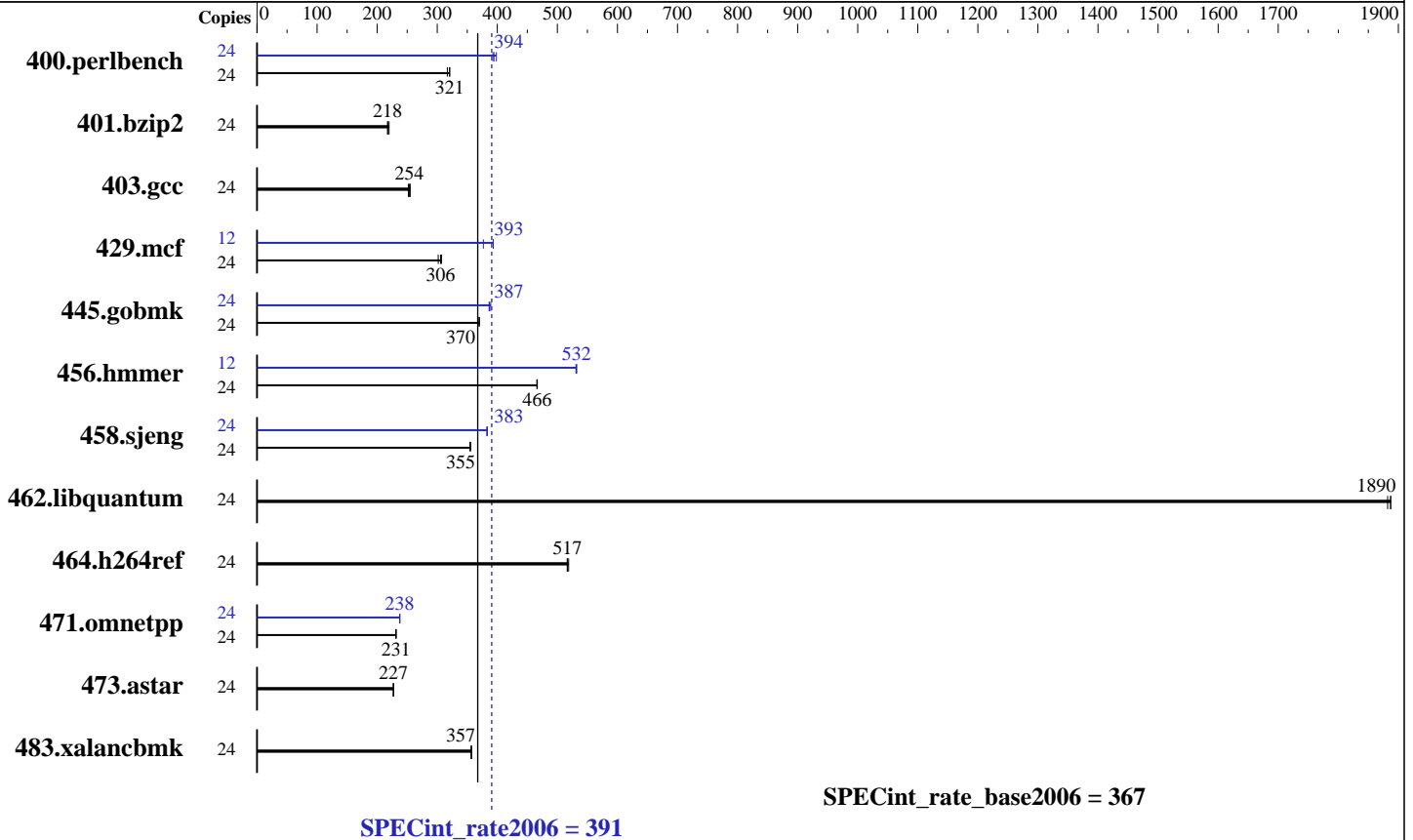
Test date: May-2011

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	<b><u>731</u></b>	<b><u>321</u></b>	24	597	393	<b><u>594</u></b>	<b><u>394</u></b>	588	399
401.bzip2	24	1053	220	1065	217	<b><u>1065</u></b>	<b><u>218</u></b>	24	1053	220	1065	217	<b><u>1065</u></b>	<b><u>218</u></b>
403.gcc	24	758	255	<b><u>761</u></b>	<b><u>254</u></b>	767	252	24	758	255	<b><u>761</u></b>	<b><u>254</u></b>	767	252
429.mcf	24	726	302	<b><u>716</u></b>	<b><u>306</u></b>	713	307	12	290	377	<b><u>278</u></b>	<b><u>393</u></b>	278	393
445.gobmk	24	<b><u>681</u></b>	<b><u>370</u></b>	684	368	680	370	24	652	386	647	389	<b><u>651</u></b>	<b><u>387</u></b>
456.hammer	24	<b><u>480</u></b>	<b><u>466</u></b>	480	467	481	466	12	211	531	<b><u>211</u></b>	<b><u>532</u></b>	210	532
458.sjeng	24	817	355	<b><u>818</u></b>	<b><u>355</u></b>	819	355	24	<b><u>758</u></b>	<b><u>383</u></b>	758	383	758	383
462.libquantum	24	<b><u>264</u></b>	<b><u>1890</u></b>	264	1890	264	1880	24	<b><u>264</u></b>	<b><u>1890</u></b>	264	1890	264	1880
464.h264ref	24	1028	516	<b><u>1028</u></b>	<b><u>517</u></b>	1024	519	24	1028	516	<b><u>1028</u></b>	<b><u>517</u></b>	1024	519
471.omnetpp	24	<b><u>648</u></b>	<b><u>231</u></b>	648	231	648	231	24	631	238	631	238	<b><u>631</u></b>	<b><u>238</u></b>
473.astar	24	742	227	741	227	<b><u>742</u></b>	<b><u>227</u></b>	24	742	227	741	227	<b><u>742</u></b>	<b><u>227</u></b>
483.xalancbmk	24	<b><u>464</u></b>	<b><u>357</u></b>	464	357	465	356	24	<b><u>464</u></b>	<b><u>357</u></b>	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](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](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](mailto:webmaster@spec.org).

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