



# SPEC® CINT2006 Result

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## Oracle Corporation

SPECint®2006 = **41.5**

Sun Fire X4270 M2 (Intel Xeon X5680 3.33GHz)

SPECint\_base2006 = **38.1**

CPU2006 license: 6

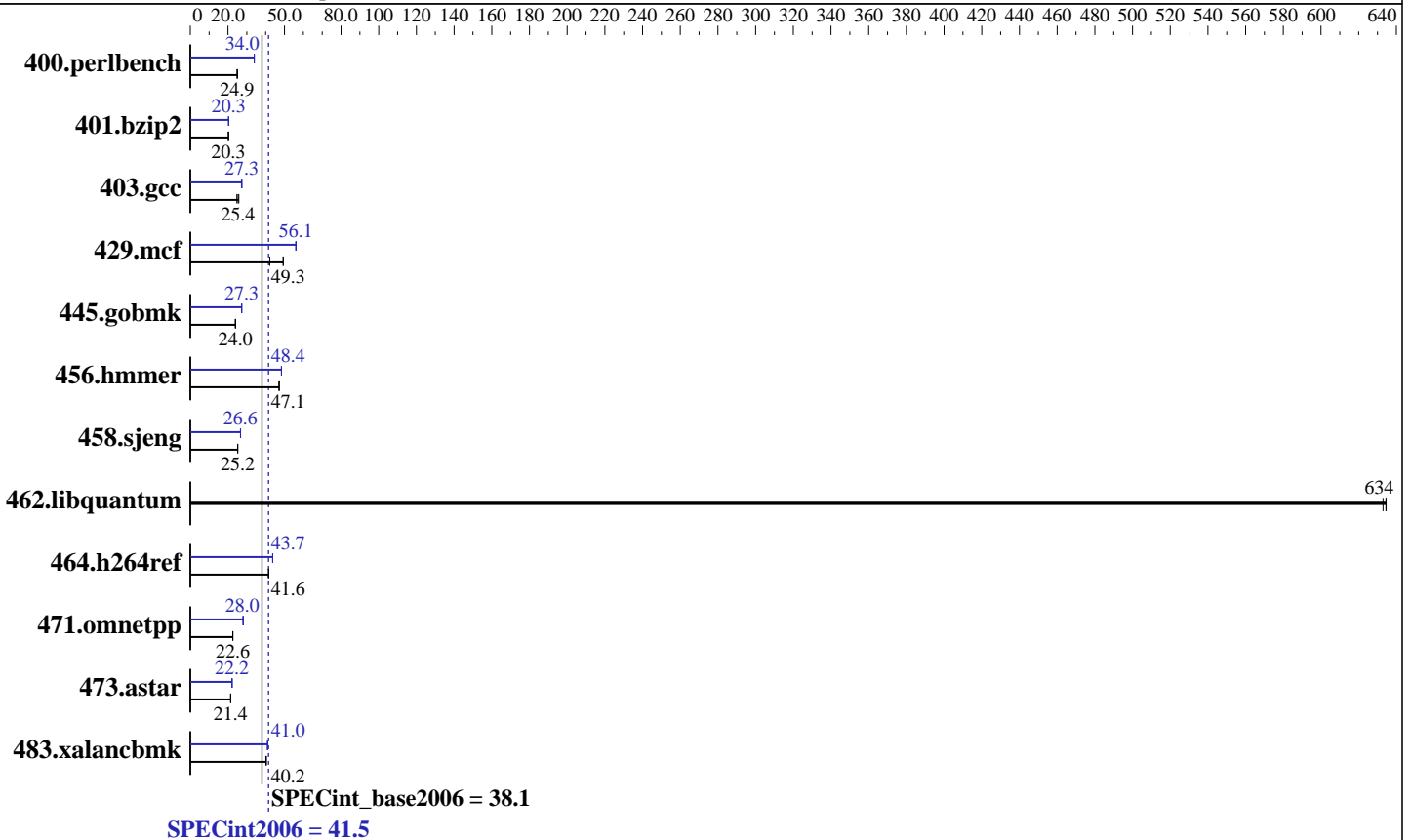
Test date: Aug-2010

Test sponsor: Oracle Corporation

Hardware Availability: Aug-2010

Tested by: Oracle Corporation

Software Availability: Jun-2010



### Hardware

CPU Name: Intel Xeon X5680  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3333  
 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 DDR3-1333 CL9, 2 Rank, ECC)  
 Disk Subsystem: 1 x 1 TB, SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Oracle Solaris 10 10/09  
 Compiler: Oracle Solaris Studio Express 6/10  
 Auto Parallel: Yes  
 File System: ufs  
 System State: Default  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: MicroQuill SmartHeap Library 9.01 for x64



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	392	24.9	<u>392</u>	<u>24.9</u>	392	24.9	<u>288</u>	<u>34.0</u>	288	34.0	288	33.9
401.bzip2	476	20.3	<u>476</u>	<u>20.3</u>	476	20.3	<u>474</u>	<u>20.3</u>	474	20.4	474	20.3
403.gcc	<u>318</u>	<u>25.4</u>	326	24.7	312	25.8	<u>295</u>	<u>27.3</u>	296	27.2	294	27.4
429.mcf	216	42.2	<u>185</u>	<u>49.3</u>	185	49.3	162	56.1	<u>163</u>	<u>56.1</u>	163	56.0
445.gobmk	<u>438</u>	<u>24.0</u>	437	24.0	438	24.0	384	27.3	<u>385</u>	<u>27.3</u>	385	27.2
456.hammer	198	47.2	198	47.1	<u>198</u>	<u>47.1</u>	<u>193</u>	<u>48.4</u>	193	48.4	193	48.4
458.sjeng	481	25.2	<u>481</u>	<u>25.2</u>	481	25.2	<u>454</u>	<u>26.6</u>	454	26.6	453	26.7
462.libquantum	<u>32.7</u>	<u>634</u>	32.7	633	32.7	635	<u>32.7</u>	<u>634</u>	32.7	633	32.7	635
464.h264ref	533	41.5	532	41.6	<u>532</u>	<u>41.6</u>	506	43.7	<u>506</u>	<u>43.7</u>	506	43.8
471.omnetpp	<u>277</u>	<u>22.6</u>	277	22.6	277	22.6	223	28.0	<u>223</u>	<u>28.0</u>	223	28.1
473.astar	327	21.5	328	21.4	<u>328</u>	<u>21.4</u>	317	22.1	317	22.2	<u>317</u>	<u>22.2</u>
483.xalancbmk	<u>172</u>	<u>40.2</u>	171	40.4	172	40.2	168	41.0	<u>168</u>	<u>41.0</u>	168	41.0

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

## Operating System Notes

```
ulimit -s 131072 (shell): increases stack
```

```
/etc/system parameters
tune_t_fsflushr=10
autoup=900
lpg_alloc_prefer=1
```

## Platform Notes

```
Default BIOS settings used except:
Hardware Prefetch           : Enabled
Adjacent Cache Line Prefetch : Enabled
Data Reuse Optimization     : Disabled
Intel C-STATE technology    : Disabled
```

## General Notes

Environment variables set by runspec before the start of the run:

```
OMP_NUM_THREADS = "12"
SUNW_MP_PROCBIND = "23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0"
SUNW_MP_THR_IDLE = "SPIN"
```



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## Base Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

## Base Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmr: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
```

## Base Optimization Flags

C benchmarks:

```
-fast -xipo=2 -m64 -xpagesize=2M -xprefetch -xalias_level=std
-xautopar -xreduction
```

C++ benchmarks:

```
-fast -xipo=2 -m64 -xpagesize=2M -xprefetch=no%auto
-xalias_level=compatible
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap64
-library=stlport4
```

## Base Other Flags

C benchmarks:

```
-V -# -xjobs=24
```

C++ benchmarks:

```
-verbose=diags,version -xjobs=24
```



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## Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

## Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_SOLARIS_X64 -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS

```

## Peak Optimization Flags

C benchmarks:

```

400.perlbench: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=1 -m64
-xalias_level=std -xpagesize=2M -xprefetch=no%auto
-lbsdmalloc

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=std -xprefetch=no%auto -lumem

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xaddr32=yes -m64 -xalias_level=std
-xprefetch=no%auto

429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xalias_level=std

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -m64 -xpagesize=2M
-xrestrict -xalias_level=strong -xautopar

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=strong

458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=strong -xrestrict
-xprefetch=no%auto

```

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## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64  
-xalias\_level=strong -xpagesize=2M

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=2M -library=stlport4 -xalias\_level=compatible  
-L/data1/SmartHeap\_9/lib -R/data1/SmartHeap\_9/lib -lsmartheap

473.astar: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64  
-xpagesize=2M -xalias\_level=compatible -library=stlport4  
-xrestrict  
-L/data1/SmartHeap\_9/lib -R/data1/SmartHeap\_9/lib -lsmartheap64

483.xalancbmk: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64  
-xpagesize=2M  
-L/data1/SmartHeap\_9/lib -R/data1/SmartHeap\_9/lib -lsmartheap64  
-library=stlport4

## Peak Other Flags

C benchmarks:

-V -# -xjobs=24

C++ benchmarks:

-verbose=diags,version -xjobs=24

The flags file that was used to format this result can be browsed at

[http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86\\_64.20100901.html](http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86_64.20100901.html)

You can also download the XML flags source by saving the following link:

[http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86\\_64.20100901.xml](http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio-x86_64.20100901.xml)



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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