



# SPEC<sup>®</sup> CINT2006 Result

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## Oracle Corporation

SPECint<sup>®</sup>\_rate2006 = 678

Sun Fire X4470 (Intel Xeon X7550 2.00 GHz)

SPECint\_rate\_base2006 = 611

CPU2006 license: 6

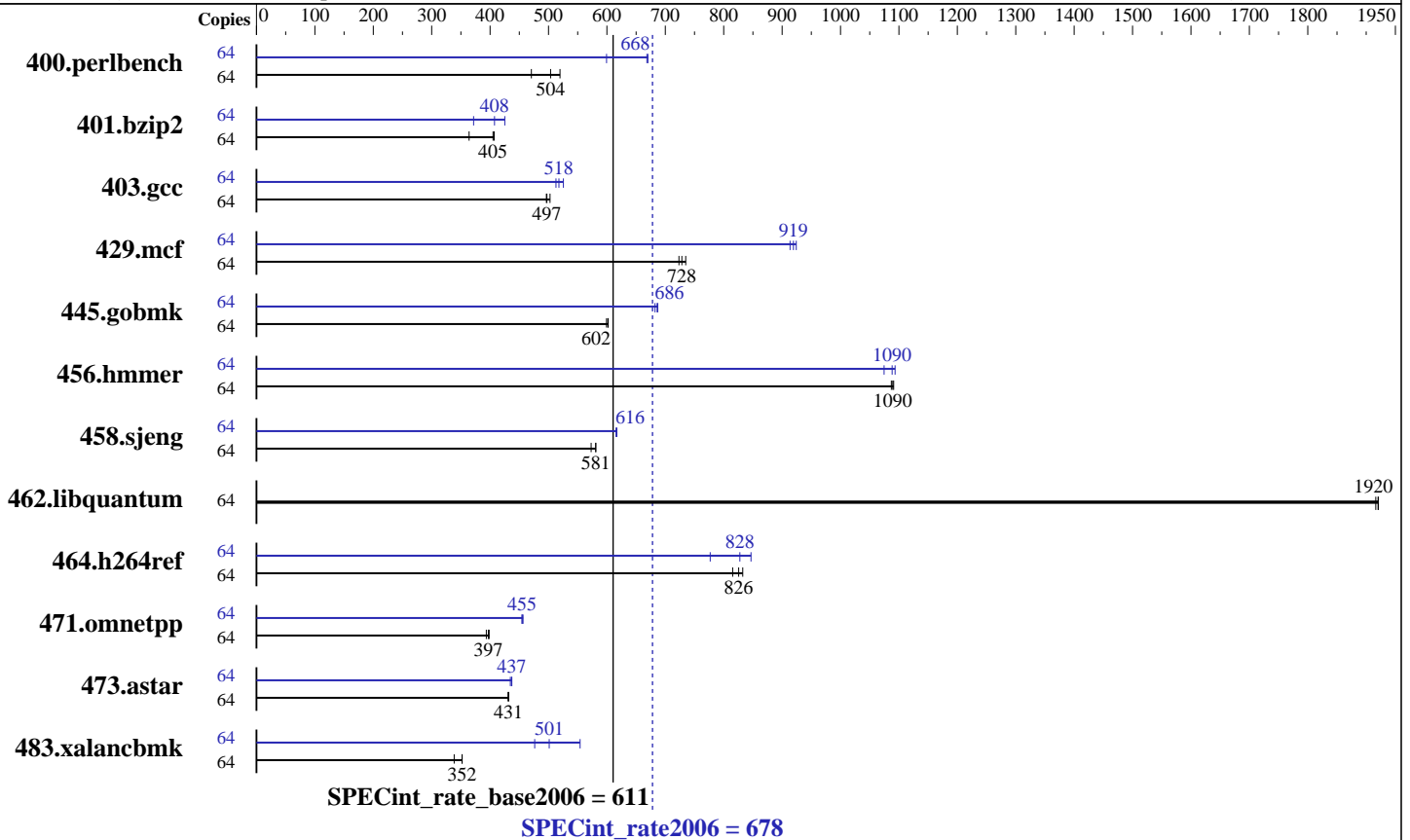
Test date: Nov-2010

Test sponsor: Oracle Corporation

Hardware Availability: Jun-2010

Tested by: Oracle Corporation

Software Availability: Jun-2010



### Hardware

CPU Name: Intel Xeon X7550  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 1-4 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: 18 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (64 x 4 GB 2Rx4 PC3-10600R-9, ECC, see add'l detail in notes)  
 Disk Subsystem: 1 x 500 GB, SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Oracle Solaris 10 9/10  
 Compiler: Oracle Solaris Studio Express 6/10  
 Auto Parallel: No  
 File System: ufs  
 System State: Default  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: MicroQuill SmartHeap Library 9.01 for x64



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## Results Table

| Benchmark      | Base   |             |             |             |            |             |            | Peak   |            |             |             |             |            |            |
|----------------|--------|-------------|-------------|-------------|------------|-------------|------------|--------|------------|-------------|-------------|-------------|------------|------------|
|                | Copies | Seconds     | Ratio       | Seconds     | Ratio      | Seconds     | Ratio      | Copies | Seconds    | Ratio       | Seconds     | Ratio       | Seconds    | Ratio      |
| 400.perlbench  | 64     | 1328        | 471         | <u>1242</u> | <b>504</b> | 1203        | 520        | 64     | 1043       | 599         | <u>935</u>  | <b>668</b>  | 933        | 670        |
| 401.bzip2      | 64     | 1696        | 364         | 1517        | 407        | <u>1525</u> | <b>405</b> | 64     | 1661       | 372         | <u>1515</u> | <b>408</b>  | 1453       | 425        |
| 403.gcc        | 64     | 1025        | 503         | 1038        | 496        | <b>1036</b> | <u>497</u> | 64     | <b>995</b> | <u>518</u>  | 980         | 526         | 1005       | 513        |
| 429.mcf        | 64     | 807         | 723         | 794         | 735        | <b>801</b>  | <u>728</u> | 64     | 639        | 914         | 632         | 924         | <b>635</b> | <u>919</u> |
| 445.gobmk      | 64     | <b>1116</b> | <u>602</u>  | 1115        | 602        | 1120        | 599        | 64     | 977        | 687         | 984         | 682         | <b>979</b> | <u>686</u> |
| 456.hammer     | 64     | <b>548</b>  | <u>1090</u> | 547         | 1090       | 549         | 1090       | 64     | 546        | 1090        | <u>549</u>  | <b>1090</b> | 556        | 1070       |
| 458.sjeng      | 64     | 1333        | 581         | <b>1333</b> | <u>581</u> | 1351        | 573        | 64     | 1255       | 617         | <b>1257</b> | <u>616</u>  | 1257       | 616        |
| 462.libquantum | 64     | <b>691</b>  | <u>1920</u> | 690         | 1920       | 692         | 1920       | 64     | <b>691</b> | <u>1920</u> | 690         | 1920        | 692        | 1920       |
| 464.h264ref    | 64     | 1701        | 833         | 1737        | 815        | <b>1716</b> | <u>826</u> | 64     | 1673       | 847         | <u>1711</u> | <b>828</b>  | 1823       | 777        |
| 471.omnetpp    | 64     | <b>1008</b> | <u>397</u>  | 1004        | 398        | 1016        | 394        | 64     | <b>879</b> | <u>455</u>  | 876         | 456         | 880        | 455        |
| 473.astar      | 64     | 1043        | 431         | <b>1042</b> | <u>431</u> | 1040        | 432        | 64     | 1034       | 435         | <b>1029</b> | <u>437</u>  | 1028       | 437        |
| 483.xalancbmk  | 64     | 1305        | 339         | 1254        | 352        | <b>1254</b> | <u>352</u> | 64     | 927        | 476         | 797         | 554         | <b>881</b> | <u>501</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.

## Operating System Notes

```
ulimit -s unlimited (shell)

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

## Platform Notes

The system automatically configures the memory to run at 1066 MHz. Default BIOS settings used.

## Base Compiler Invocation

C benchmarks:  
cc

C++ benchmarks:  
CC



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## Base Portability Flags

```
400.perlbench: -DSPEC_CPU_SOLARIS_X64 -DSPEC_CPU_LP64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_SOLARIS -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_SOLARIS -DSPEC_CPU_LP64
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_SOLARIS
```

## Base Optimization Flags

```
C benchmarks:
-fast -xipo=2 -m64 -xaddr32=yes -xpagesize=2M

C++ benchmarks:
-fast -xipo=2 -xpagesize=2M -xalias_level=compatible
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap
-library=stlport4
```

## Base Other Flags

```
C benchmarks:
-V -# -xjobs=64

C++ benchmarks:
-verbose=diags,version -xjobs=64
```

## 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
```

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## Peak Portability Flags (Continued)

462.libquantum: -DSPEC\_CPU\_SOLARIS -DSPEC\_CPU\_LP64  
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 -lbsdmalloc

401.bzip2: -fast -xipo=2 -m64 -xpagesize=2M -xalias\_level=std  
-lumem

403.gcc: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=2M -W2,-Rujam -W2,-Rtile -m64  
-xalias\_level=std

429.mcf: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m32  
-xpagesize=2M -xalias\_level=strong -xprefetch=no%auto  
-lbsdmalloc

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

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

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

462.libquantum: basepeak = yes

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

C++ benchmarks:

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

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## Peak Optimization Flags (Continued)

```
473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=compatible -library=stlport4
-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 -xunroll=2
-xpagesize=2M -xalias_level=compatible -library=stlport4
-m32
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap
```

## Peak Other Flags

C benchmarks:  
-V -# -xjobs=64

C++ benchmarks:  
-verbose=diags,version -xjobs=64

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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