



# SPEC® CINT2006 Result

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## Oracle Corporation SPARC T7-1

SPECint®\_rate2006 = 1200

SPECint\_rate\_base2006 = 1120

CPU2006 license: 6

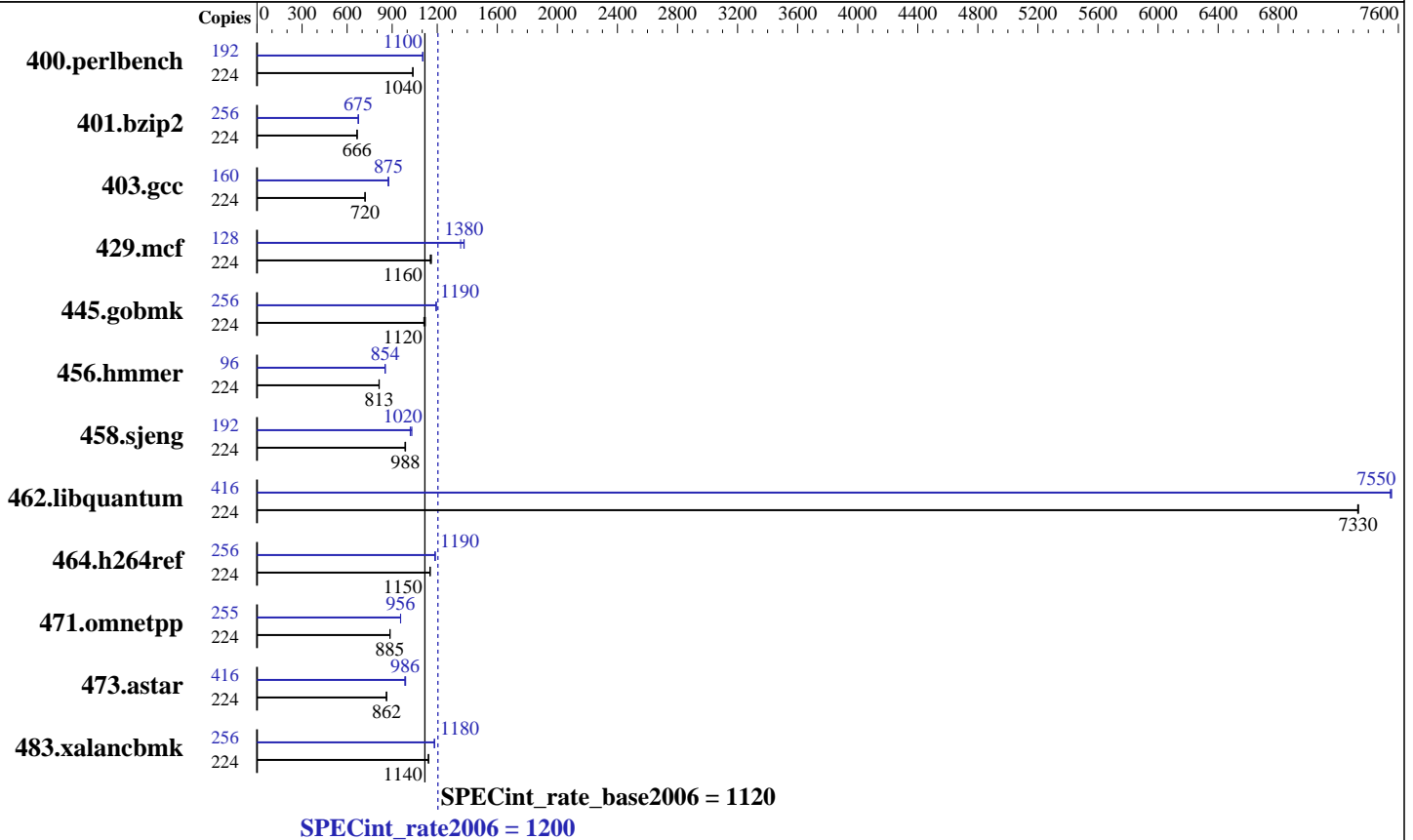
Test sponsor: Oracle Corporation

Tested by: Oracle Corporation

Test date: Oct-2015

Hardware Availability: Oct-2015

Software Availability: Oct-2015



### Hardware

CPU Name: SPARC M7  
 CPU Characteristics:  
 CPU MHz: 4133  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 1 chip, 32 cores/chip, 8 threads/core  
 CPU(s) orderable: 1 chip  
 Primary Cache: 16 KB I + 16 KB D on chip per core  
 Secondary Cache: 2 MB I on chip per chip (256 KB / 4 cores);  
 4 MB D on chip per chip (256 KB / 2 cores)  
 L3 Cache: 64 MB I+D on chip per chip (8 MB / 4 cores)  
 Other Cache: None  
 Memory: 512 GB (16 x 32 GB 4Rx4 PC4-2133P-L)  
 Disk Subsystem: 732 GB, 4 x 400 GB SAS SSD (mirrored)  
 Other Hardware: None

### Software

Operating System: Oracle Solaris 11.3  
 Compiler: C/C++/Fortran: Version 12.4 of Oracle Solaris Studio,  
 4/15 Patch Set  
 Auto Parallel: No  
 File System: zfs  
 System State: Default  
 Base Pointers: 32-bit  
 Peak Pointers: 32-bit  
 Other Software: None



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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	224	2109	1040	2108	1040	<u>2109</u>	<u>1040</u>	192	1700	1100	1699	1100	<u>1699</u>	<u>1100</u>
401.bzip2	224	3240	667	3246	666	<u>3245</u>	<u>666</u>	256	3667	674	<u>3661</u>	<u>675</u>	3655	676
403.gcc	224	2509	719	2503	720	<u>2505</u>	<u>720</u>	160	1474	874	<u>1472</u>	<u>875</u>	1469	877
429.mcf	224	1759	1160	1771	1150	<u>1764</u>	<u>1160</u>	128	<u>848</u>	<u>1380</u>	846	1380	861	1360
445.gobmk	224	2096	1120	<u>2105</u>	<u>1120</u>	2115	1110	256	<u>2251</u>	<u>1190</u>	2252	1190	2250	1190
456.hammer	224	2574	812	2566	814	<u>2571</u>	<u>813</u>	96	1050	853	1049	854	<u>1049</u>	<u>854</u>
458.sjeng	224	<u>2743</u>	<u>988</u>	2740	989	2751	985	192	2277	1020	<u>2268</u>	<u>1020</u>	2253	1030
462.libquantum	224	633	7330	633	7340	<u>633</u>	<u>7330</u>	416	<u>1141</u>	<u>7550</u>	1142	7550	1141	7550
464.h264ref	224	4297	1150	<u>4301</u>	<u>1150</u>	4307	1150	256	4771	1190	4782	1180	<u>4778</u>	<u>1190</u>
471.omnetpp	224	<u>1581</u>	<u>885</u>	1581	885	1581	885	255	1668	956	1667	956	<u>1667</u>	<u>956</u>
473.astar	224	1822	863	<u>1824</u>	<u>862</u>	1825	862	416	2964	985	<u>2962</u>	<u>986</u>	2951	990
483.xalancbmk	224	1353	1140	<u>1354</u>	<u>1140</u>	1354	1140	256	1495	1180	1495	1180	<u>1495</u>	<u>1180</u>

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

## Submit Notes

Processes were bound to cores using "submit" and "pbind". The config file option 'submit' was used in order to accomplish this.

## Operating System Notes

ulimit -s 131072 was used to limit the space consumed by the stack

```
/etc/system parameters
set user_reserve_hint_pct=85
  Informs the system about how much memory is expected
  to be used by applications (as a percentage)
```

```
poweradm set administrative-authority=none
  Disables Solaris power management
```

600 GB of swap space was configured

## Platform Notes

Power policy set to 'disabled' at ILOM Power Management menu  
Sysinfo program /cpu2006/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ 5569a0425e2ad530534e4c79a46e4d28  
running on t7-1-003.us.oracle.com Thu Oct 15 14:31:09 2015

This section contains SUT (System Under Test) info as seen by  
Continued on next page



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## Platform Notes (Continued)

some common utilities. To remove or add to this section, see:  
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```
From /usr/sbin/psrinfo
  SPARC-M7 (chipid 0, clock 4133 MHz)
  1 chips
  256 threads
  4133 MHz
```

```
From kstat:          32 cores
```

```
From prtconf: 489728 Megabytes
```

```
/etc/release:
  Oracle Solaris 11.3 SPARC
```

```
uname -a:
  SunOS t7-1-003.us.oracle.com 5.11 11.3 sun4v sparc sun4v
```

```
disk: df -h $SPEC
Filesystem      Size  Used  Available Capacity  Mounted on
spec/nogz/cpu2006  732G  1.9G    730G      1%    /cpu2006
```

(End of data from sysinfo program)

## General Notes

SPEC CPU2006 benchmark was updated with runspec --update

## Base Compiler Invocation

C benchmarks:  
cc

C++ benchmarks:  
CC

## Base Portability Flags

```
400.perlbench: -DSPEC_CPU_SOLARIS_SPARC
403.gcc: -DSPEC_CPU_SOLARIS
462.libquantum: -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS
```



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## Base Optimization Flags

C benchmarks:

-g -xsegment\_align=64K -fast -xipo=2 -xpagesize\_heap=256M  
-xprefetch=no%auto -lfast -xalias\_level=std -xthroughput

C++ benchmarks:

-g -xsegment\_align=64K -fast -xipo=2 -xpagesize\_heap=256M  
-xprefetch=no%auto -lfast -xalias\_level=compatible -library=stlport4  
-xthroughput

## Base Other Flags

C benchmarks:

-xjobs=32 -V

C++ benchmarks:

-xjobs=32 -verbose=diags,version

## Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_SOLARIS\_SPARC  
403.gcc: -DSPEC\_CPU\_SOLARIS  
462.libquantum: -DSPEC\_CPU\_SOLARIS  
483.xalancbmk: -DSPEC\_CPU\_SOLARIS

## Peak Optimization Flags

C benchmarks:

400.perlbench: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xalias\_level=std -xrestrict -lfast -xthroughput  
-xpagesize=256M

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## Peak Optimization Flags (Continued)

401.bzip2: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M  
-xalias\_level=strong

403.gcc: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=std

429.mcf: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=256M -W2,-Asac

445.gobmk: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M  
-xrestrict -xalias\_level=std -xprefetch=no%auto -xipo=2

456.hmmer: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xipo=2 -xthroughput -Wc,-Qpeep-Ex:minmax\_use\_cmov=2  
-Wc,-Qms\_pipe+ulmscc=1

458.sjeng: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xipo=2 -xthroughput -xprefetch=no%auto -xalias\_level=std

462.libquantum: -g -fast -xipo=2 -xpagesize=256M -xalias\_level=std  
-lfast -xprefetch\_level=2 -Wc,-Qlu-en=1-t=4 -xthroughput

464.h264ref: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=4M -xalias\_level=strong -xthroughput

### C++ benchmarks:

471.omnetpp: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=256M -xalias\_level=compatible -library=stdcxx4  
-template=extdef -lmmheap

473.astar: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=256M  
-xalias\_level=compatible -xprefetch=no%auto  
-library=stdcxx4 -template=extdef -lfast

483.xalancbmk: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xipo=2  
-xpagesize=256M -xalias\_level=compatible -xprefetch=no%auto  
-library=stlport4 -lfast



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## Peak Other Flags

C benchmarks:  
-xjobs=32 -V

C++ benchmarks:  
-xjobs=32 -verbose=diags,version

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.4.20151118.html>  
<http://www.spec.org/cpu2006/flags/Oracle-Tseries-RevB.html>

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

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.4.20151118.xml>  
<http://www.spec.org/cpu2006/flags/Oracle-Tseries-RevB.xml>

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

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