



# SPEC® CINT2006 Result

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## Oracle Corporation

SPECint®\_rate2006 = 927

Sun Fire X4-2 (Intel Xeon E5-2697 v2 2.7GHz)

SPECint\_rate\_base2006 = 808

CPU2006 license: 6

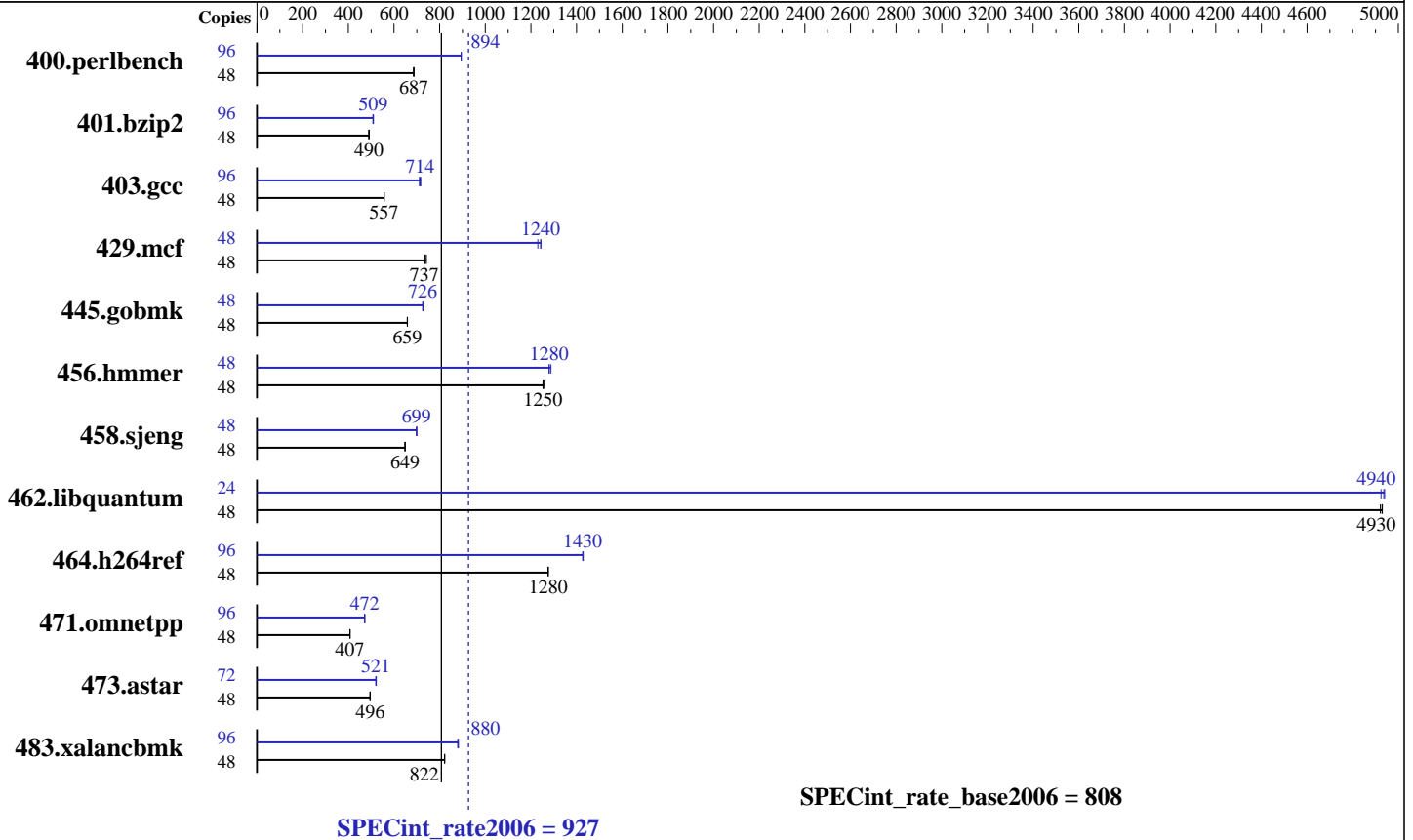
Test date: Sep-2013

Test sponsor: Oracle Corporation

Hardware Availability: Sep-2013

Tested by: Oracle Corporation

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E5-2697 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 2700  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core  
 CPU(s) orderable: 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: 30 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 1 x 600 GB SAS, 10K RPM  
 Other Hardware: None

### Software

Operating System: Solaris 11.1 (SRU 11)  
 Compiler: C/C++: Version 12.3 of Oracle Solaris Studio 10/13 Patch Set (tested with nightly build 20130822)  
 Auto Parallel: No  
 File System: zfs  
 System State: Default  
 Base Pointers: 32/64-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	48	684	686	682	688	<b>683</b>	<b>687</b>	96	1048	895	<b>1049</b>	<b>894</b>	1049	894
401.bzip2	48	<b>945</b>	<b>490</b>	944	491	945	490	96	1816	510	<b>1820</b>	<b>509</b>	1824	508
403.gcc	48	695	556	<b>694</b>	<b>557</b>	693	557	96	<b>1082</b>	<b>714</b>	1077	717	1086	711
429.mcf	48	<b>594</b>	<b>737</b>	595	736	590	742	48	<b>352</b>	<b>1240</b>	352	1240	356	1230
445.gobmk	48	764	659	<b>764</b>	<b>659</b>	765	658	48	693	726	692	727	<b>693</b>	<b>726</b>
456.hammer	48	357	1250	<b>357</b>	<b>1250</b>	356	1260	48	350	1280	348	1290	<b>350</b>	<b>1280</b>
458.sjeng	48	<b>896</b>	<b>649</b>	895	649	896	648	48	<b>831</b>	<b>699</b>	831	699	830	699
462.libquantum	48	202	4930	202	4920	<b>202</b>	<b>4930</b>	24	101	4920	<b>101</b>	<b>4940</b>	101	4940
464.h264ref	48	833	1270	832	1280	<b>833</b>	<b>1280</b>	96	<b>1488</b>	<b>1430</b>	1486	1430	1489	1430
471.omnetpp	48	736	407	<b>737</b>	<b>407</b>	737	407	96	1271	472	1273	471	<b>1272</b>	<b>472</b>
473.astar	48	680	496	<b>680</b>	<b>496</b>	680	495	72	<b>970</b>	<b>521</b>	971	521	967	523
483.xalancbmk	48	403	821	403	822	<b>403</b>	<b>822</b>	96	751	883	<b>753</b>	<b>880</b>	753	880

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 to bind processes to CPU threads with pbind(1)

## Operating System Notes

```
ulimit -s unlimited (shell): increases stack
/etc/system parameters
  autoup=1000
  tune_t_fsflushr=10
```

gzip compression set using "zfs set compression=gzip <zfs-filesystem>"

## Platform Notes

Default BIOS Settings were used.

```
Sysinfo program /export/home/cpu2006v1.2/Docs/sysinfo
: 6775 2011-08-16 #f7622badcf24e01c368b1db4377c
running on bur398-85 Sun Sep 1 16:52:31 2013
```

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```
From /usr/sbin/psrinfo -pv
Intel(r) Xeon(r) CPU E5-2697 v2 @ 2.70GHz
x86 (GenuineIntel 306E4 family 6 model 62 step 4 clock 2693 MHz)
Continued on next page
```



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## Platform Notes (Continued)

```
/usr/sbin/psrinfo -p: 2 chips
/usr/sbin/psrinfo -pv | grep "core has" | wc -l: 24 cores
/usr/sbin/psrinfo | wc -l: 48 threads
```

```
/usr/sbin/prtconf | grep "Memory size:": 262087 Megabytes
```

```
/etc/release:
```

```
Oracle Solaris 11.1 X86
```

```
uname -a:
```

```
SunOS bur398-85 5.11 11.1 i86pc i386 i86pc
```

```
disk: df -h
```

Filesystem	Size	Used	Available	Capacity	Mounted on
rpool/export/home	547G	50G	419G	11%	/export/home

(End of data from sysinfo program)

## General Notes

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

OMP\_NUM\_THREADS = "1"

## Base Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

## 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
```



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## Base Optimization Flags

C benchmarks:

-g -fast -xtarget=ivybridge -xipo=2 -m64 -xaddr32 -xpagesize=2M

C++ benchmarks:

-g -fast -xtarget=ivybridge -xipo=2 -m32 -xpagesize=2M  
-xalias\_level=compatible -library=stlport4 -lfast

## 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\_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 -xtarget=nehalem  
-xprefetch=no%auto -xipo=1 -m64 -xpagesize=2M  
-xalias\_level=std -lbsdmalloc

401.bzip2: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge  
-xipo=2 -m64 -xpagesize=2M -xalias\_level=strong

403.gcc: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge  
-xipo=2 -m32 -xpagesize=2M -xalias\_level=std  
-W2,-Abuiltin\_opt:calloc\_no\_support=on

429.mcf: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge  
-xipo=2 -m32 -xpagesize\_heap=2M -xpagesize\_stack=4k  
-xalias\_level=std -W2,-Asac

Continued on next page

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Page 4



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## Peak Optimization Flags (Continued)

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

456.hmmer: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge  
-xipo=2 -m64 -xpagesize=4k -xalias\_level=strong

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

462.libquantum: -g -fast -xtarget=ivybridge -xipo=2 -m64 -xpagesize=2M  
-xalias\_level=std

464.h264ref: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge  
-xipo=2 -m32 -xpagesize=2M -xalias\_level=strong

C++ benchmarks:

471.omnetpp: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge  
-xipo=2 -m32 -xpagesize=2M -xalias\_level=compatible  
-library=stlport4  
-L/export/home/SmartHeap\_9/lib/ -R/export/home/SmartHeap\_9/lib/ -lsmartheap

473.astar: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge  
-xipo=2 -m64 -xpagesize=2M -xalias\_level=compatible  
-xrestrict -library=stlport4 -lfast

483.xalancbmk: -g -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xtarget=ivybridge  
-xipo=2 -m32 -xpagesize=2M -xunroll=8 -library=stlport4  
-lfast

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

[http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-x86\\_64.20130924.html](http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-x86_64.20130924.html)  
[http://www.spec.org/cpu2006/flags/Oracle-platform-x86\\_64.CPUv1.2-RevA.20120425.html](http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.20120425.html)

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

[http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-x86\\_64.20130924.xml](http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.3-x86_64.20130924.xml)  
[http://www.spec.org/cpu2006/flags/Oracle-platform-x86\\_64.CPUv1.2-RevA.20120425.xml](http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.20120425.xml)



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

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