SPEC® CINT2006 Result

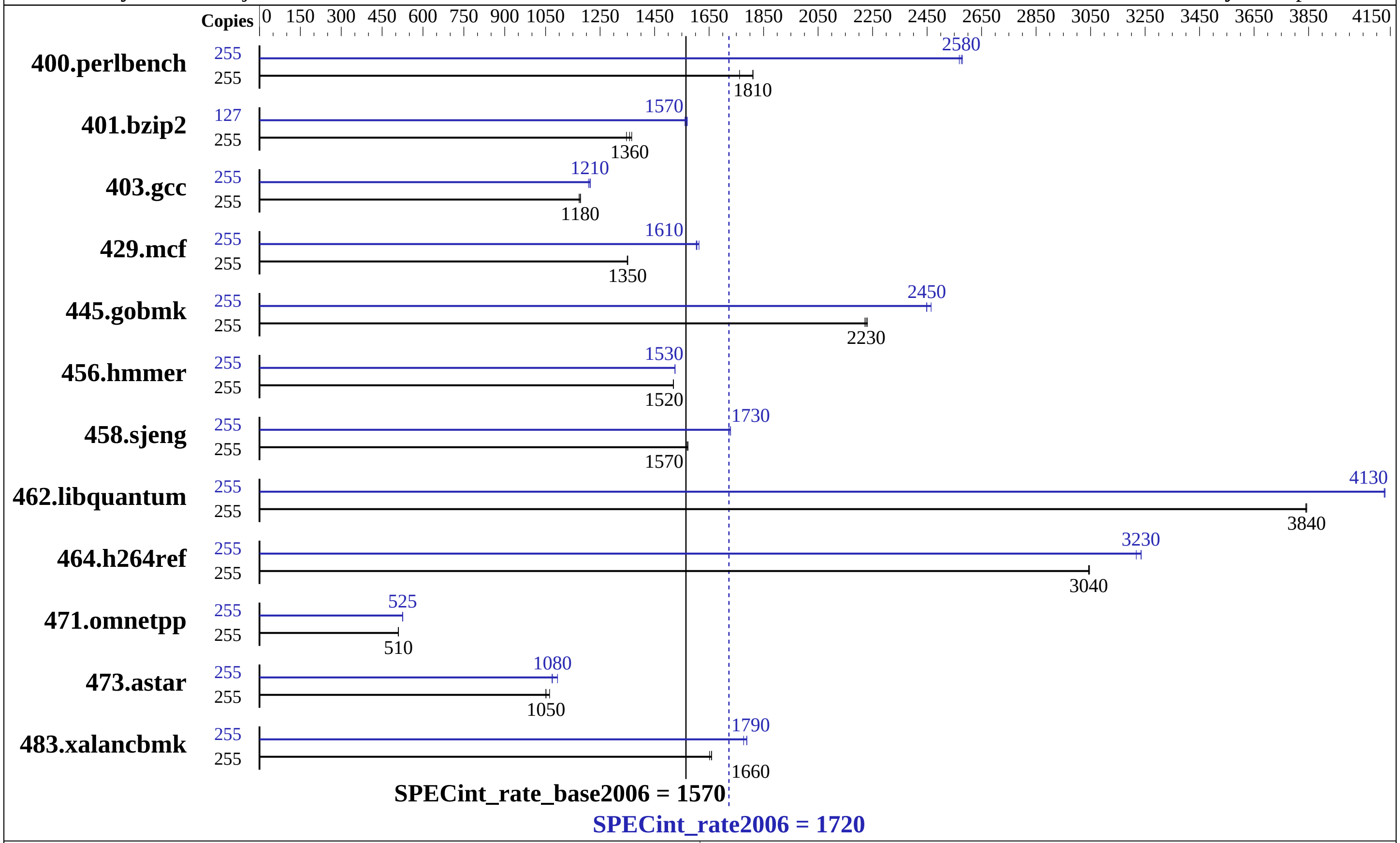
Oracle Corporation
SPARC Enterprise M9000

SPECint®_rate2006 = 1720

SPECint_rate_base2006 = 1570

CPU2006 license: 6
Test sponsor: Oracle Corporation
Tested by: Fujitsu

Test date: Sep-2010
Hardware Availability: Dec-2010
Software Availability: Sep-2010



Hardware

CPU Name:	SPARC64 VII+
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	128 cores, 32 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 8 CMUs; each CMU contains 2 or 4 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	976 GB (32 x 2 GB + 228 x 4 GB, 8-way interleaved)
Disk Subsystem:	6 x 300 GB 10,000 RPM SAS
Other Hardware:	None

Software

Operating System:	Oracle Solaris 10 9/10
Compiler:	Oracle Solaris Studio 12.2
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

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	255	1414	1760	**1376**	**1810**	1375	1810	255	966	2580	970	2570	**967**	**2580**
401.bzip2	255	1827	1350	**1812**	**1360**	1801	1370	127	**782**	**1570**	781	1570	785	1560
403.gcc	255	**1744**	**1180**	1742	1180	1750	1170	255	1700	1210	1691	1210	**1693**	**1210**
429.mcf	255	**1721**	**1350**	1723	1350	1720	1350	255	**1449**	**1610**	1442	1610	1451	1600
445.gobmk	255	1199	2230	**1201**	**2230**	1204	2220	255	**1092**	**2450**	1085	2460	1093	2450
456.hmmer	255	1567	1520	1566	1520	**1567**	**1520**	255	1560	1530	**1560**	**1530**	1560	1520
458.sjeng	255	1969	1570	1962	1570	**1965**	**1570**	255	1791	1720	1784	1730	**1785**	**1730**
462.libquantum	255	1375	3840	**1375**	**3840**	1376	3840	255	**1280**	**4130**	1280	4130	1279	4130
464.h264ref	255	1855	3040	1853	3050	**1854**	**3040**	255	1744	3240	1754	3220	**1744**	**3230**
471.omnetpp	255	3123	510	**3126**	**510**	3128	509	255	3031	526	**3035**	**525**	3035	525
473.astar	255	1681	1060	1703	1050	**1702**	**1050**	255	1636	1090	1667	1070	**1665**	**1080**
483.xalancbmk	255	1061	1660	**1061**	**1660**	1065	1650	255	984	1790	990	1780	**984**	**1790**

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

Compiler Invocation Notes

```
Oracle Solaris Studio 12.2 is distributed with mandatory OS patches
 118683-05  119963-20  120753-08
Oracle Solaris Studio 12.2 and patches are available at
 http://oracle.com/goto/solarisstudio
```

Submit Notes

```
The config file option 'submit' was used.  Processes were assigned to
specific processors using 'pbind' commands.  The list of processors to use
was provided in the 'BIND' variable, to generate the pbind commands.
(For details, please see the config file.)
```

Operating System Notes

```
Shell Environments:

    ulimit -s 131072 was used to limit the space consumed
    by the stack.(making more space available for the heap)

 System Tunables (/etc/system parameters):

 autoup=600
     Causes pages older than the listed number of seconds to
     be written by fsflush.
 zfs:zfs_arc_max = 0x10000000
     Control the amount of memory used by ZFS for caching
```

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Operating System Notes (Continued)

```
lpg_alloc_prefer=1
    Prefer local pages, even if not easily available
bufhwm=40000000
    Memory byte limit for caching I/O buffers.

Other System Settings:

The webconsole service was turned off using
    svcadm disable webconsole
```

Platform Notes

```
Memory is 8-way interleaved by filling each CMU's slots with the same
capacity DIMMs.

This result is measured on a SPARC Enterprise M9000 server from
Fujitsu.  The SPARC Enterprise M9000 server from Oracle and from
Fujitsu are electrically equivalent.
```

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

Base Optimization Flags

C benchmarks:
-fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=1
-xalias_level=std -ll2amm

C++ benchmarks:
-xdepend -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=1 -xalias_level=compatible -ll2amm -lfast

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Base Other Flags

C benchmarks:
-xjobs=16 -V -#

C++ benchmarks:
-xjobs=16 -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: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -M /usr/lib/ld/map.bssalign -xipo=2 -xalias_level=std -xrestrict -Xc -xprefetch=no%auto -xO4 -lfast

401.bzip2: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -xalias_level=strong -xchip=generic

403.gcc: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -xipo=2 -xalias_level=std -xO4 -xchip=generic -xunroll=7 -ll2amm

429.mcf: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -xipo=2 -xprefetch_auto_type=indirect_array_access -xchip=generic -xlinkopt -xunroll=7 -W2,-Apf:llist=3

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Peak Optimization Flags (Continued)

429.mcf (continued):
`-W2,-Apf:noinnerllist -Wc,-Qlp-prt=1 -Wc,-Qlp-prwt=3 -lfast`

445.gobmk: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -fma=fused -xalias_level=std -xrestrict -ll2amm -lfast`

456.hmmer: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -fma=fused -xipo=2`

458.sjeng: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -fma=fused -xipo=2 -xO4 -xlinkopt -xunroll=2 -xprefetch=no%auto -ll2amm`

462.libquantum: `-fast -xpagesize=4M -fma=fused -xalias_level=std -M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch=no%auto -ll2amm`

464.h264ref: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -fma=fused -xipo=2 -xalias_level=std -xprefetch=no -ll2amm`

C++ benchmarks:

471.omnetpp: `-xdepend -library=stlport4 -xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -fma=fused -xalias_level=compatible -xipo=2 -xprefetch_level=2 -Qoption cg -Qlp-av=0 -xprefetch=latx:1.5 -xcache=generic -ll2amm`

473.astar: `-xdepend -library=stlport4 -xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -fma=fused -xalias_level=compatible -M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch=no%auto -xarch=generic -xunroll=4 -lfast -lbsdmalloc`

483.xalancbmk: `-xdepend -library=stlport4 -xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -fma=fused -xalias_level=compatible -xipo=2 -xprefetch=no%auto -xunroll=8 -lfast`

Peak Other Flags

C benchmarks:
`-xjobs=16 -V -#`

C++ benchmarks:
`-xjobs=16 -verbose=diags,version`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20101221.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20101221.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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