SPEC® CINT2006 Result

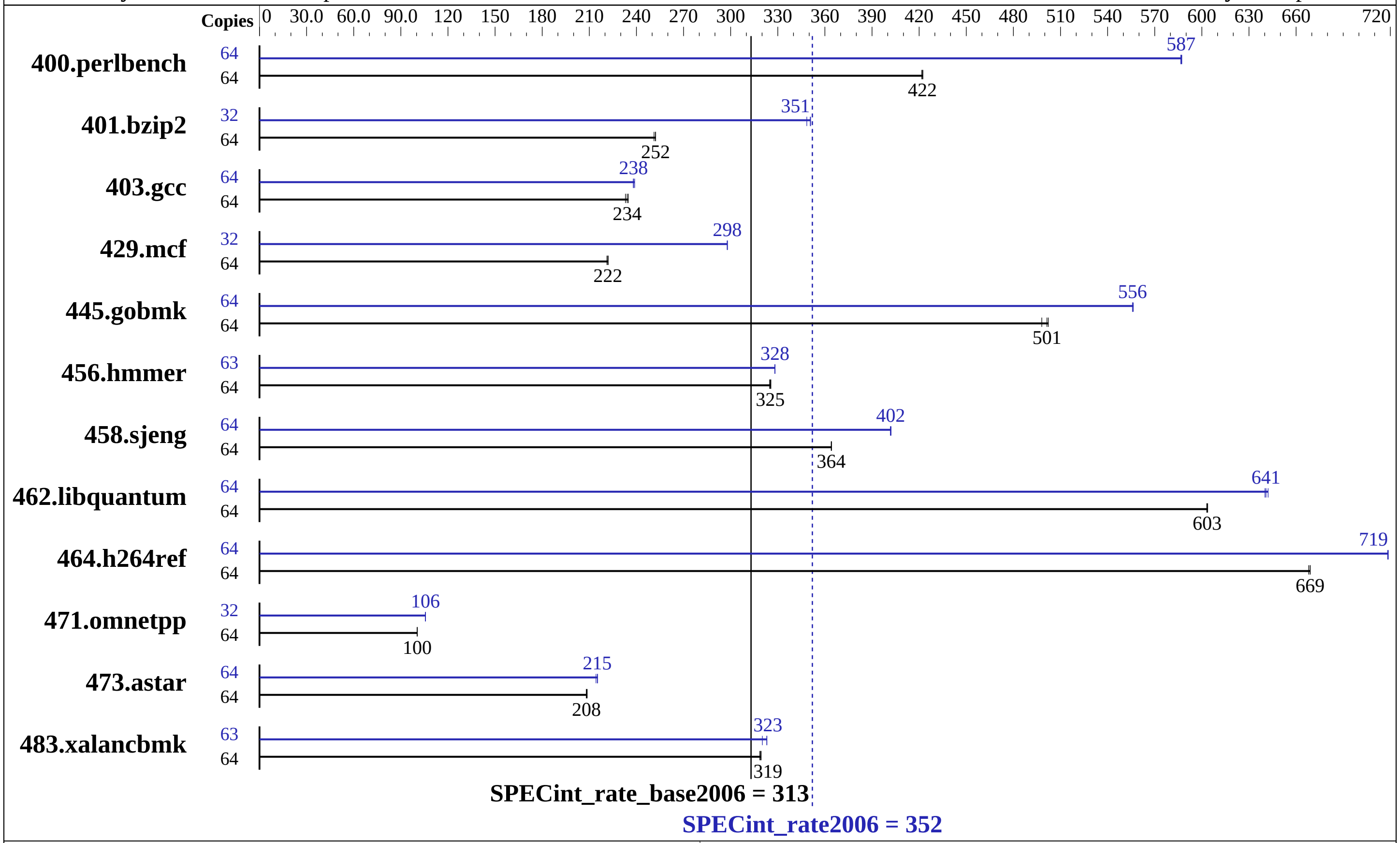
Fujitsu
SPARC Enterprise M5000

SPECint®_rate2006 = 352

SPECint_rate_base2006 = 313

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Oracle Corporation

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



Hardware

CPU Name:	SPARC64 VII+
CPU Characteristics:	
CPU MHz:	2660
FPU:	Integrated
CPU(s) enabled:	32 cores, 8 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 4 CPUMs; each CPUM contains 2 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	11 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	128 GB (64 x 2 GB, 8-way interleaved)
Disk Subsystem:	134 GB on 2 x 72 GB 10K RPM SAS disks
Other Hardware:	None

Software

Operating System:	Oracle Solaris 10 9/10
Compiler:	Oracle Solaris Studio 12.2
Auto Parallel:	No
File System:	zfs with gzip compression
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	64	**1481**	**422**	1480	422	1483	422	64	**1066**	**587**	1066	587	1065	587
401.bzip2	64	2449	252	2458	251	**2449**	**252**	32	880	351	886	348	**881**	**351**
403.gcc	64	2194	235	**2201**	**234**	2211	233	64	2157	239	2165	238	**2163**	**238**
429.mcf	64	**2632**	**222**	2629	222	2638	221	32	980	298	**980**	**298**	979	298
445.gobmk	64	**1339**	**501**	1337	502	1348	498	64	1208	556	1207	556	**1208**	**556**
456.hmmer	64	1834	326	**1836**	**325**	1839	325	63	1792	328	**1791**	**328**	1791	328
458.sjeng	64	2126	364	**2127**	**364**	2127	364	64	1928	402	**1927**	**402**	1926	402
462.libquantum	64	2197	604	2199	603	**2198**	**603**	64	**2069**	**641**	2071	640	2065	642
464.h264ref	64	2120	668	2117	669	**2117**	**669**	64	1972	718	1971	719	**1971**	**719**
471.omnetpp	64	**3983**	**100**	3983	100	3981	100	32	**1892**	**106**	1891	106	1893	106
473.astar	64	**2158**	**208**	2159	208	2153	209	64	**2089**	**215**	2097	214	2087	215
483.xalancbmk	64	1386	319	1383	319	**1385**	**319**	63	1345	323	1358	320	**1346**	**323**

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

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

Operating System Notes

```
ulimit -s 131072 was used to limit the space
consumed by the stack (and therefore make more
space available to the heap).

 /etc/system parameters
    autoup=600
       Causes pages older than the listed number of seconds to
       be written by fsflush.
    tune_t_fsflushr=10
       Controls how many seconds elapse between runs of the
       page flush daemon, fsflush.
```

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Operating System Notes (Continued)

```
        zfs:zfs_arc_min=0x10000000
        zfs:zfs_arc_max=0x380000000
           Limits the consumption of memory by the zfs file system
           cache to 256 MB to 14 GB .  (The arc_max sets the maximum
           cache size; arc_min sets the minimum.)
        kernel_cage_enable=0
           Allows the kernel to use memory in any locality group.
           In particular, allows ZFS file caches to be located on
           any memory board.
        lpg_alloc_prefer=1
            Indicates that extra effort should be taken to ensure
            that pages are created in the nearby lgroup (NUMA location).
     The "webconsole" service was turned off using
         svcadm disable webconsole
     The system had 52 GB of swap space.
```

Platform Notes

```
    Memory is 8-way interleaved by filling all slots with
    the same capacity DIMMs.

    This result is measured on a SPARC Enterprise M5000 server from
    Oracle.  The SPARC Enterprise M5000 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 -xalias_level=std -ll2amm

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

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: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-M /usr/lib/ld/map.bssalign -fma=fused -xipo=1
-xalias_level=std -xrestrict -Xc -xO4 -xprefetch=latx:0.5
-lfast

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

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Peak Optimization Flags (Continued)

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xipo=2 -xalias_level=std -xprefetch=no
-xarch=sparcfmaf -ll2amm

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

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xalias_level=std -xrestrict -xlinkopt
-xprefetch=no%auto -xunroll=6 -lfast -ll2amm

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 -xprefetch=no%auto
-ll2amm

462.libquantum: -fast -xpagesize=4M -fma=fused -xipo=2 -xprefetch=no
-lbsdmalloc

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

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xalias_level=compatible -xdepend -library=stlport4
-fma=fused -xipo=2 -Qoption cg -Qlp-av=0 -xO4 -lfast

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

483.xalancbmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xalias_level=compatible -xdepend -library=stlport4

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Peak Optimization Flags (Continued)

483.xalancbmk (continued):
-fma=fused -xipo=2 -xprefetch=no -xO4 -lfast

Peak Other Flags

C benchmarks:
-xjobs=32 -V -#

C++ benchmarks:
-xjobs=32 -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.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.xml

Tested with SPEC CPU2006 v1.1.
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