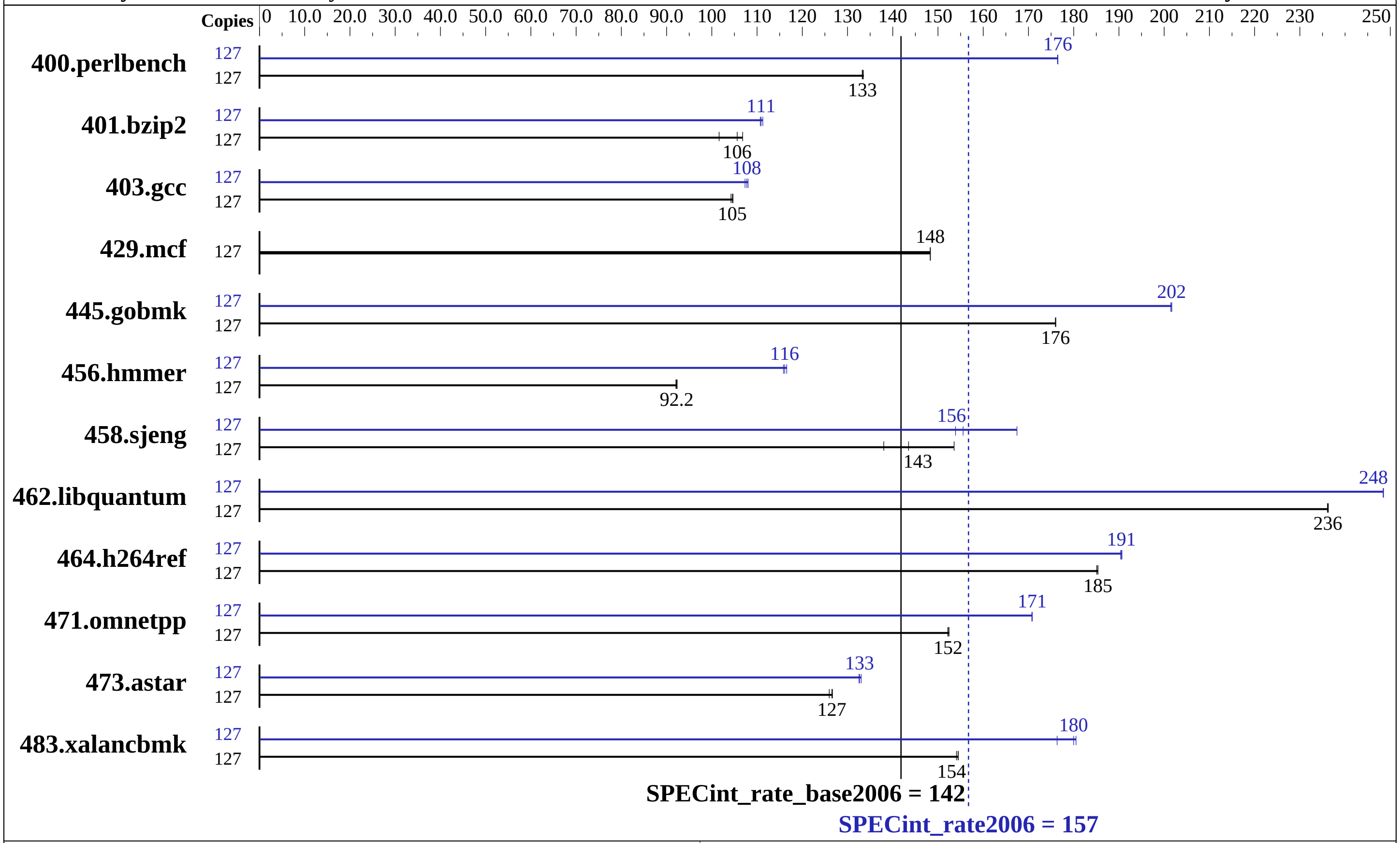
SPEC® CINT2006 Result

Sun Microsystems
Sun SPARC Enterprise T5240

SPECint®_rate2006 = 157

SPECint_rate_base2006 = 142

CPU2006 license:	6	**Test date:**	Mar-2008
Test sponsor:	Sun Microsystems	**Hardware Availability:**	May-2008
Tested by:	Sun Microsystems	**Software Availability:**	Feb-2008



Hardware

CPU Name:	UltraSPARC T2 Plus
CPU Characteristics:	
CPU MHz:	1415
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 8 threads/core
CPU(s) orderable:	2 chips
Primary Cache:	16 KB I + 8 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	128 GB (32 x 4 GB)
Disk Subsystem:	737 GB RAID 5 using Sun StoreEdge 6120 with 12x 73 GB 10K RPM disks (Seagate ST373307 2 Gbps Fibre Channel)
Other Hardware:	None

Software

Operating System:	Solaris 10 8/07 + patch 127111-08
Compiler:	Sun Studio 12 and gccfss V4.2.0 (see additional detail below)
Auto Parallel:	No
File System:	ufs
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	127	9312	133	9292	134	**9307**	**133**	127	7033	176	**7030**	**176**	7029	177
401.bzip2	127	12061	102	**11604**	**106**	11473	107	127	11013	111	**11051**	**111**	11070	111
403.gcc	127	9766	105	9808	104	**9780**	**105**	127	9464	108	9524	107	**9490**	**108**
429.mcf	127	7811	148	**7810**	**148**	7809	148	127	7811	148	**7810**	**148**	7809	148
445.gobmk	127	7571	176	**7570**	**176**	7567	176	127	6606	202	**6607**	**202**	6613	201
456.hmmer	127	12834	92.3	12873	92.0	**12848**	**92.2**	127	10165	117	10230	116	**10204**	**116**
458.sjeng	127	10007	154	**10709**	**143**	11134	138	127	9177	167	9987	154	**9879**	**156**
462.libquantum	127	11145	236	**11141**	**236**	11136	236	127	10589	248	10592	248	**10592**	**248**
464.h264ref	127	**15164**	**185**	15162	185	15186	185	127	14740	191	14762	190	**14748**	**191**
471.omnetpp	127	**5214**	**152**	5215	152	5207	152	127	4649	171	**4647**	**171**	4646	171
473.astar	127	7078	126	7038	127	**7046**	**127**	127	**6720**	**133**	6702	133	6726	133
483.xalancbmk	127	**5674**	**154**	5687	154	5673	154	127	**4868**	**180**	4854	181	4970	176

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

Compiler Invocation Notes

```
Sun Studio compiler patches are available at
http://developers.sun.com/sunstudio/downloads/patches/ss12_patches.jsp
The tested configuration included patch 124867-02, 124861-04,
124863-01, 127000-01
Peak also uses "GCC for SPARC Systems", which combines gcc
with the Sun Code Generator for SPARC systems.  It is invoked
as "gcc", and accepts source code compatible with GCC 4.2.
For more information, including support, see
     http://cooltools.sunsource.net/gcc/
```

Operating System Notes

```
Processes were bound to cores using "submit" and "pbind".
A processor set was created using
  psrset -c 1-127
and the runspec process was placed into the set using
  psrset -e 1

These shell commands request use of local 4MB pages:
     export LD_PRELOAD=madv.so.1:mpss.so.1
     export MPSSHEAP=4MB
     export MPSSSTACK=4MB
     export MADV=access_lwp
'access_lwp' means that the next light weight
process to touch the specified address range
will access it the most heavily.
```

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Operating System Notes (Continued)

```
ulimit -s 131072 was used to allow the stack to grow
up to 131072 KB (aka 128 MB).  Note that saying "131072"
is preferable to "unlimited", because there is a tradeoff
between space for the stack vs. space for the heap.

The open file limit was set to 1300 with ulimit -n

/etc/system parameters
   autoup=600
      Causes pages older than the listed number of seconds to
      be written by fsflush.
   bufhwm=3000
      Memory byte limit for caching I/O buffers
   segmap_percent=1
      Set maximum percent memory for file system cache
   tune_t_fsflushr=10
      Controls how many seconds elapse between runs of the
      page flush daemon, fsflush.
   tsb_rss_factor=128
      Suggests that the the size of the TSB (Translation Storage Buffer)
      may be increased if it is more than 25% (128/512) full.  Doing so
      may reduce TSB traps, at the cost of additional kernel memory.

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

The system had 144 GB of swap space.
```

Platform Notes

```
This result was measured on a Sun SPARC Enterprise T5240.
The Sun SPARC Enterprise T5240 and the Fujitsu SPARC
Enterprise T5240 are electrically equivalent.
```

Base Compiler Invocation

C benchmarks:
    cc

C++ benchmarks:
    CC

Base Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_SPARC

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Base Portability Flags (Continued)

403.gcc: -DSPEC_CPU_SOLARIS
462.libquantum: -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS

Base Optimization Flags

C benchmarks:
-g -fast -xipo=2 -xpagesize=4M -xprefetch=no%auto -xalias_level=std -M /usr/lib/ld/map.bssalign

C++ benchmarks:
-g0 -library=stlport4 -fast -xipo=2 -xpagesize=4M -xprefetch=no%auto -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign

Base Other Flags

C benchmarks:
-xjobs=32 -V -#

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

Peak Compiler Invocation

C benchmarks (except as noted below):
cc

403.gcc: gcc

456.hmmer: gcc

462.libquantum: gcc

C++ benchmarks (except as noted below):
CC

471.omnetpp: g++

Peak Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_SPARC

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Peak Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_SOLARIS -DSPEC_CPU_NEED_COMPLEX_I
483.xalancbmk: -DSPEC_CPU_SOLARIS

Peak Optimization Flags

C benchmarks:

400.perlbench: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xprefetch=no%auto -M /usr/lib/ld/map.bssalign -xalias_level=std -xipo=2 -Xc -xrestrict -lfast

401.bzip2: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -M /usr/lib/ld/map.bssalign -xalias_level=strong

403.gcc: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xprefetch=no%auto -Wl,-M,/usr/lib/ld/map.bssalign -xipo=2 -xalias_level=std

429.mcf: basepeak = yes

445.gobmk: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xprefetch=no%auto -M /usr/lib/ld/map.bssalign -xalias_level=std -xrestrict

456.hmmer: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -Wl,-M,/usr/lib/ld/map.bssalign -xipo=2 -xalias_level=std

458.sjeng: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xprefetch=no%auto -M /usr/lib/ld/map.bssalign -xipo=2

462.libquantum: -fast -Wl,-M,/usr/lib/ld/map.bssalign -xipo=2

464.h264ref: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xprefetch=no%auto -M /usr/lib/ld/map.bssalign -xipo=2 -xalias_level=std

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -Wl,-M,/usr/lib/ld/map.bssalign -xipo=2 -xalias_level=std

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Peak Optimization Flags (Continued)

473.astar: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize_heap=4M -xpagesize_stack=64K -xprefetch=no%auto -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign -xipo=2 -xarch=v8plusb -lfast -lbsdmalloc

483.xalancbmk: -g0 -library=stlport4 -fast -xpagesize=4M -xprefetch=no%auto -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign -xipo=2 -lfast

Peak Other Flags

C benchmarks (except as noted below):
-xjobs=32 -V -#

403.gcc: -v

456.hmmer: -v

462.libquantum: -v

C++ benchmarks (except as noted below):
-xjobs=32 -verbose=diags,version

471.omnetpp: -v

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.xml

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

Tested with SPEC CPU2006 v1.0.1.
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