SPEC® CINT2006 Result

Sun Microsystems

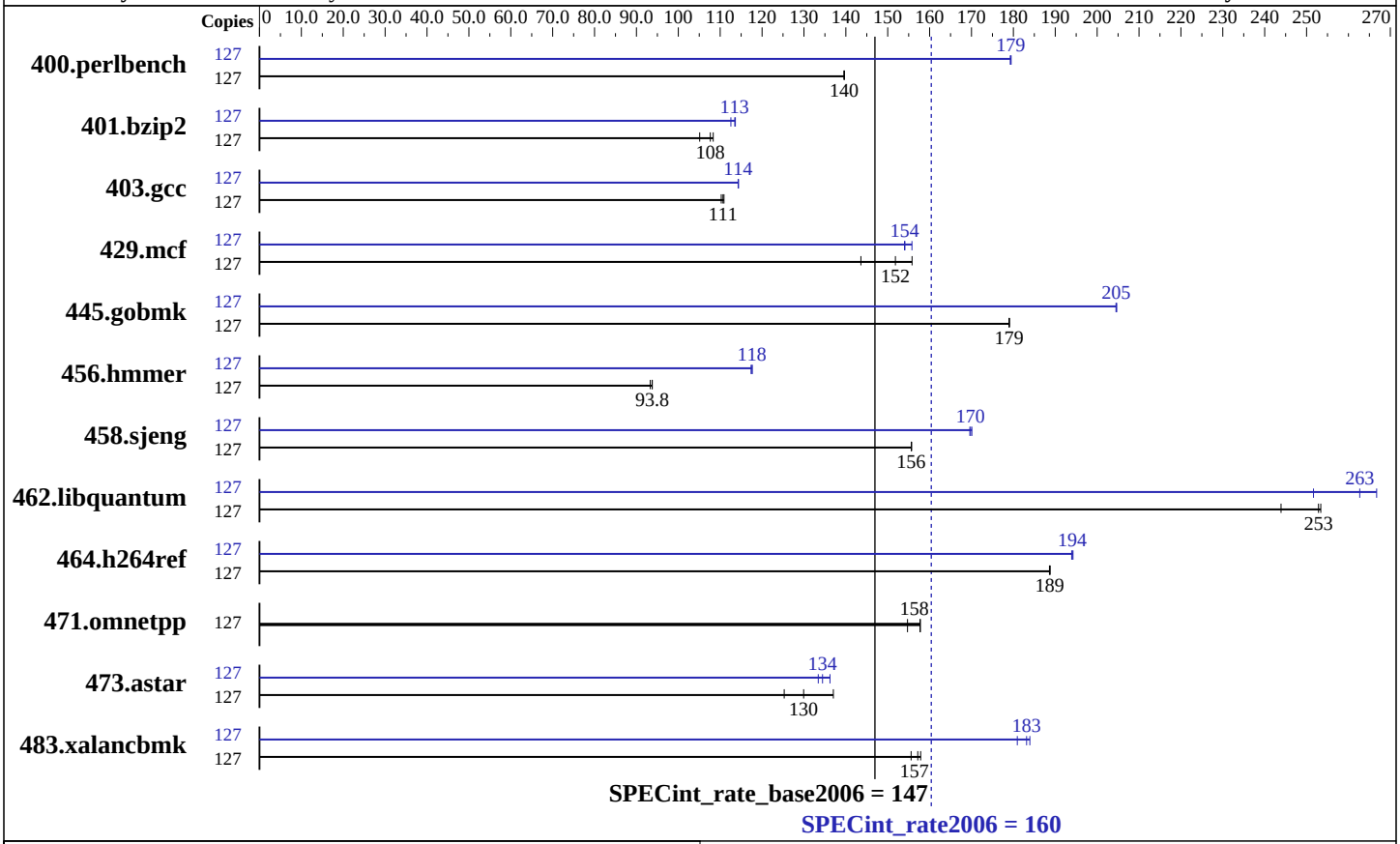
Sun Blade T6340 Server Module

SPECint®_rate2006 = 160

SPECint_rate_base2006 = 147

CPU2006 license: 6
Test sponsor: Sun Microsystems
Tested by: Sun Microsystems

Test date: Sep-2008
Hardware Availability: Oct-2008
Software Availability: Nov-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:	Sun Blade 6000 Disk Module 544 GB (8 x 73 GB 15K RPM SAS disks in software RAID 0 with 8 KB stripe)
Other Hardware:	None

Software

Operating System:	Solaris 10 10/08
Compiler:	Sun Studio 12 and gccfss V4.2.1 (see additional detail below)
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	127	**8888**	**140**	8883	140	8891	140	127	6922	179	6915	179	**6916**	**179**
401.bzip2	127	11660	105	**11385**	**108**	11313	108	127	**10800**	**113**	10786	114	10889	113
403.gcc	127	**9238**	**111**	9273	110	9218	111	127	**8942**	**114**	8939	114	8946	114
429.mcf	127	8066	144	**7628**	**152**	7434	156	127	7435	156	7521	154	**7516**	**154**
445.gobmk	127	7439	179	7445	179	**7443**	**179**	127	**6512**	**205**	6509	205	6515	204
456.hmmer	127	12636	93.8	12700	93.3	**12637**	**93.8**	127	10096	117	**10076**	**118**	10072	118
458.sjeng	127	9874	156	**9872**	**156**	9871	156	127	9035	170	**9050**	**170**	9060	170
462.libquantum	127	**10407**	**253**	10385	253	10789	244	127	10457	252	**10017**	**263**	9865	267
464.h264ref	127	**14891**	**189**	14901	189	14891	189	127	14470	194	14493	194	**14481**	**194**
471.omnetpp	127	5130	155	**5033**	**158**	5030	158	127	5130	155	**5033**	**158**	5030	158
473.astar	127	**6862**	**130**	6507	137	7116	125	127	6682	133	**6632**	**134**	6545	136
483.xalancbmk	127	**5575**	**157**	5632	156	5551	158	127	4764	184	4843	181	**4784**	**183**

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 124867-05,
124861-06, 124863-04, 127000-04

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/
```

Submit Notes

```
The config file option 'submit' was used.  Processes were
bound to cores using "submit" and "pbind".
```

Operating System Notes

```
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.

/etc/system parameters
   autoup=600
      Causes pages older than the listed number of seconds to
```

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Operating System Notes (Continued)

```
      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 168 GB of swap space.
```

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:
-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:
`CC`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_SOLARIS_SPARC`
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`

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Peak Optimization Flags (Continued)

429.mcf: -g -fast -xprefetch=no%auto -M /usr/lib/ld/map.bssalign
-xipo=2 -xrestrict -xalias_level=std -lfast

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: basepeak = yes

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

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Peak Other Flags (Continued)

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/Sun-Solaris-Studio12-and-gccfss4.2.r3.20090713.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.r3.20090713.xml`

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

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