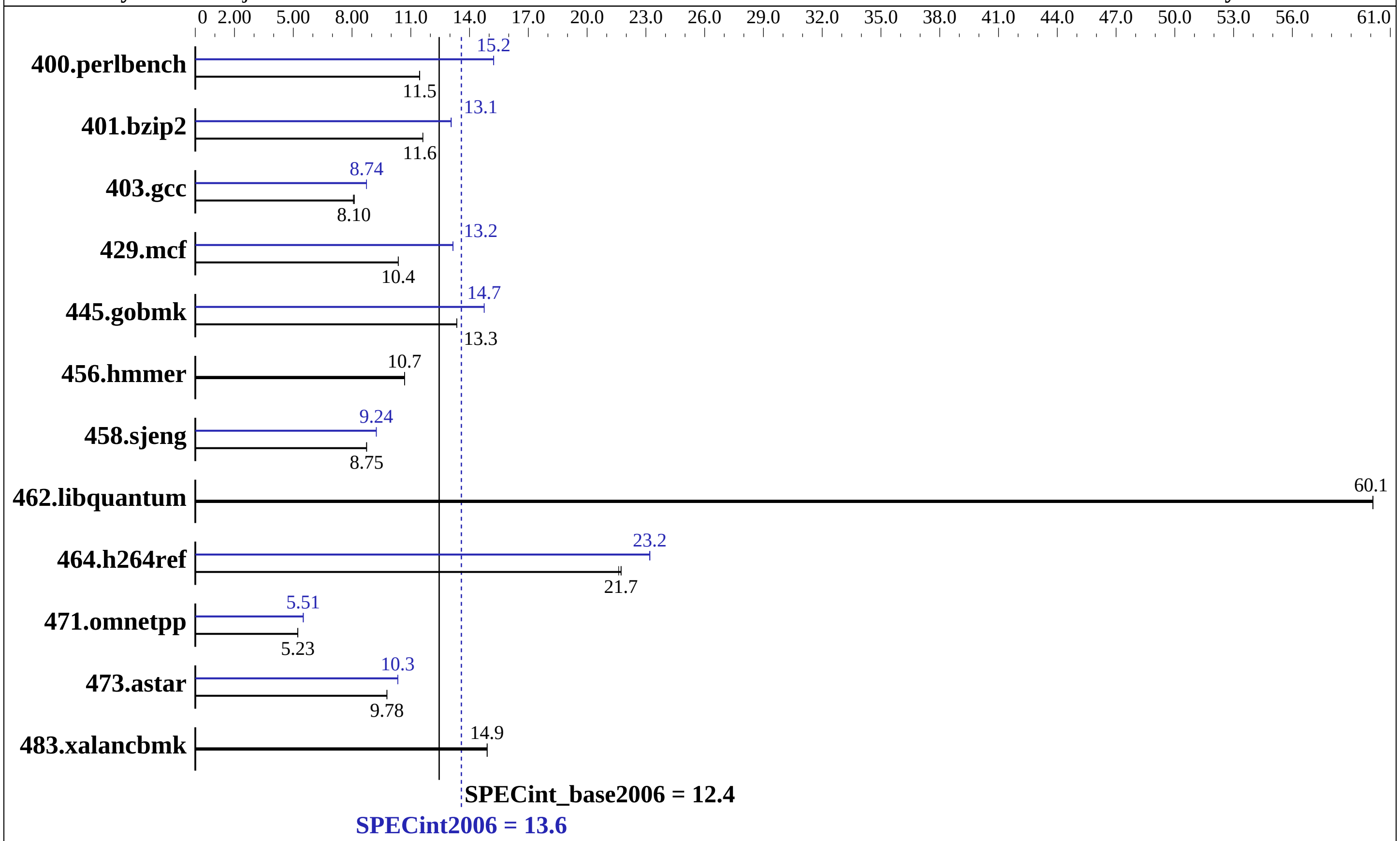
SPEC® CINT2006 Result

Sun Microsystems
Sun SPARC Enterprise M8000

SPECint®2006 = 13.6

SPECint_base2006 = 12.4

CPU2006 license: 6		**Test date:**	Jul-2009
Test sponsor:	Sun Microsystems	**Hardware Availability:**	Nov-2009
Tested by:	Fujitsu Limited	**Software Availability:**	Jun-2009



Hardware

CPU Name:	SPARC64 VII
CPU Characteristics:	
CPU MHz:	2880
FPU:	Integrated
CPU(s) enabled:	64 cores, 16 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 4 CMUs; each CMU contains 2 or 4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	384 GB (64 x 2 GB + 64 x 4 GB), 8-way interleaved
Disk Subsystem:	1 x Seagate Savvio 10K.2 (146 GB 10,000 RPM SAS)
Other Hardware:	None

Software

Operating System:	Solaris 10 5/09 with patches 119963-13, 120753-06, 118683-03
Compiler:	Sun Studio 12 Update 1
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	853	11.5	**853**	**11.5**	854	11.4	641	15.2	642	15.2	**642**	**15.2**
401.bzip2	831	11.6	**831**	**11.6**	831	11.6	**739**	**13.1**	739	13.1	738	13.1
403.gcc	998	8.07	991	8.12	**994**	**8.10**	921	8.74	**921**	**8.74**	921	8.74
429.mcf	**881**	**10.4**	880	10.4	881	10.4	**693**	**13.2**	693	13.2	694	13.1
445.gobmk	**786**	**13.3**	786	13.3	786	13.3	711	14.7	**711**	**14.7**	711	14.7
456.hmmer	874	10.7	**874**	**10.7**	874	10.7	874	10.7	**874**	**10.7**	874	10.7
458.sjeng	1383	8.75	**1383**	**8.75**	1385	8.74	1310	9.24	**1309**	**9.24**	1309	9.24
462.libquantum	345	60.1	345	60.1	**345**	**60.1**	345	60.1	345	60.1	**345**	**60.1**
464.h264ref	1018	21.7	1024	21.6	**1019**	**21.7**	954	23.2	953	23.2	**954**	**23.2**
471.omnetpp	**1194**	**5.23**	1194	5.23	1195	5.23	1135	5.51	**1134**	**5.51**	1132	5.52
473.astar	717	9.79	718	9.78	**718**	**9.78**	679	10.3	**679**	**10.3**	679	10.3
483.xalancbmk	463	14.9	**463**	**14.9**	463	14.9	463	14.9	**463**	**14.9**	463	14.9

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/ss12u1_patches.jsp
```

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)

    tune_t_fsflushr=10
       Controls how many seconds elapse between runs of the
       page flush daemon, fsflush.
    autoup=300
       Causes pages older than the listed number of seconds to
       be written by fsflush.
```

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Operating System Notes (Continued)

```
    bufhwm=3000
       Memory byte limit for caching I/O buffers.
    segmap_percent=3
       Set maximum percent memory for file system cache.
    lpg_alloc_prefer=1
       Set lgroup page allocation to strongly prefer local pages.

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 Fujitsu SPARC Enterprise M8000 Server.
Note that the Fujitsu SPARC Enterprise M8000 and Sun SPARC Enterprise
M8000 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=2 -xalias_level=compatible -lfast

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 -fma=fused -xipo=2`
`-xalias_level=std -xprefetch_level=1 -xrestrict -lfast`

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

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

429.mcf: `-xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M`
`-xipo=2 -xprefetch_level=3 -W2,-Apf:llist=3`
`-W2,-Apf:noinnerllist -Wc,-Qlp-prt=1 -Wc,-Qlp-prwt=3`

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Peak Optimization Flags (Continued)

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

456.hmmer: basepeak = yes

458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xipo=2

462.libquantum: basepeak = yes

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-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
-xalias_level=compatible -fma=fused -xipo=2
-xprefetch_level=2 -Qoption cg -Qlp-av=0 -lfast

473.astar: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xalias_level=compatible -fma=fused -xipo=2
-xprefetch_level=2 -xprefetch=latx:0.5 -lfast

483.xalancbmk: basepeak = yes

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/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r4.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r4.xml

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 04:24:58 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 October 2009.