SPEC® CINT2006 Result

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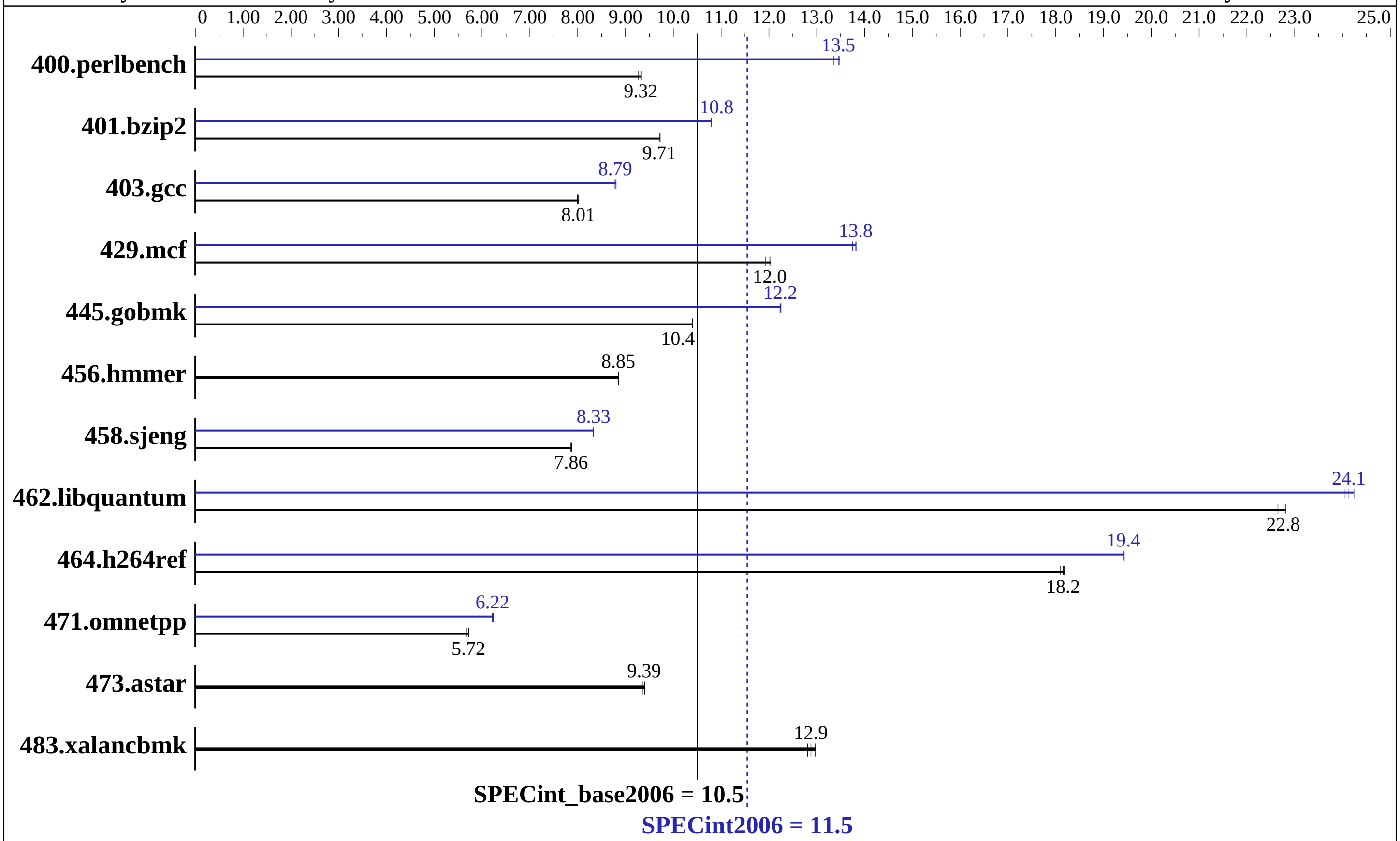
Fujitsu Limited
Fujitsu SPARC Enterprise M4000

SPECint®2006 = 11.5

SPECint_base2006 = 10.5

CPU2006 license: 19		**Test date:**	Jul-2008
Test sponsor:	Fujitsu Limited	**Hardware Availability:**	Jul-2008
Tested by:	Sun Microsystems	**Software Availability:**	Jul-2008



Hardware

CPU Name:	SPARC64 VII
CPU Characteristics:	
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 2 CPUM; each CPUM contains 2 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	5 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	64 GB (32 x 2 GB)
Disk Subsystem:	Seagate 73GB 10000 RPM SAS
Other Hardware:	None

Software

Operating System:	Solaris 10 5/08 with patch 137111-03
Compiler:	Sun Studio 12 with patches 124867-06, 124861-07, 124863-05 (see patch information 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	1053	9.27	**1048**	**9.32**	1048	9.32	**726**	**13.5**	725	13.5	731	13.4
401.bzip2	994	9.71	**994**	**9.71**	992	9.73	894	10.8	893	10.8	**893**	**10.8**
403.gcc	1003	8.02	1007	7.99	**1005**	**8.01**	914	8.80	**916**	**8.79**	917	8.78
429.mcf	758	12.0	764	11.9	**759**	**12.0**	663	13.7	660	13.8	**660**	**13.8**
445.gobmk	1008	10.4	**1009**	**10.4**	1009	10.4	856	12.3	858	12.2	**857**	**12.2**
456.hmmer	**1054**	**8.85**	1054	8.85	1054	8.85	**1054**	**8.85**	1054	8.85	1054	8.85
458.sjeng	1537	7.87	1542	7.85	**1539**	**7.86**	**1452**	**8.33**	1452	8.33	1454	8.32
462.libquantum	915	22.6	**910**	**22.8**	908	22.8	861	24.1	**859**	**24.1**	855	24.2
464.h264ref	1217	18.2	**1219**	**18.2**	1223	18.1	**1140**	**19.4**	1139	19.4	1140	19.4
471.omnetpp	1104	5.66	1092	5.72	**1093**	**5.72**	**1005**	**6.22**	1002	6.24	1006	6.21
473.astar	747	9.40	749	9.37	**747**	**9.39**	747	9.40	749	9.37	**747**	**9.39**
483.xalancbmk	539	12.8	532	13.0	**536**	**12.9**	539	12.8	532	13.0	**536**	**12.9**

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/ss12_patches.jsp
```

Operating System Notes

```
Environment Variable Settings:

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=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

Other System Settings:

The webconsole service was turned off using
```

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Operating System Notes (Continued)

```
svcadm disable webconsole
```

Platform Notes

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

This result is measured on a Sun SPARC Enterprise M4000 Server.
Note that the Sun SPARC Enterprise M4000 and Fujitsu SPARC Enterprise
M4000 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 -#

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Base Other Flags (Continued)

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 -xalias_level=std -Xc -xipo=2 -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 -m32 -xarch=sparcvis2
-xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch_level=2 -ll2amm

429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xprefetch_level=3 -W2,-Apf:llist=3 -W2,-Apf:noinnerllist

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

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Peak Optimization Flags (Continued)

456.hmmer: basepeak = yes

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

462.libquantum: Same as 458.sjeng

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xipo=2 -xalias_level=std -m32
-xarch=sparcvis2 -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 -lfast

473.astar: basepeak = yes

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-and-gccfss4.2.20090713.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.xml

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 18:48:15 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 August 2008.