SPEC® CINT2006 Result

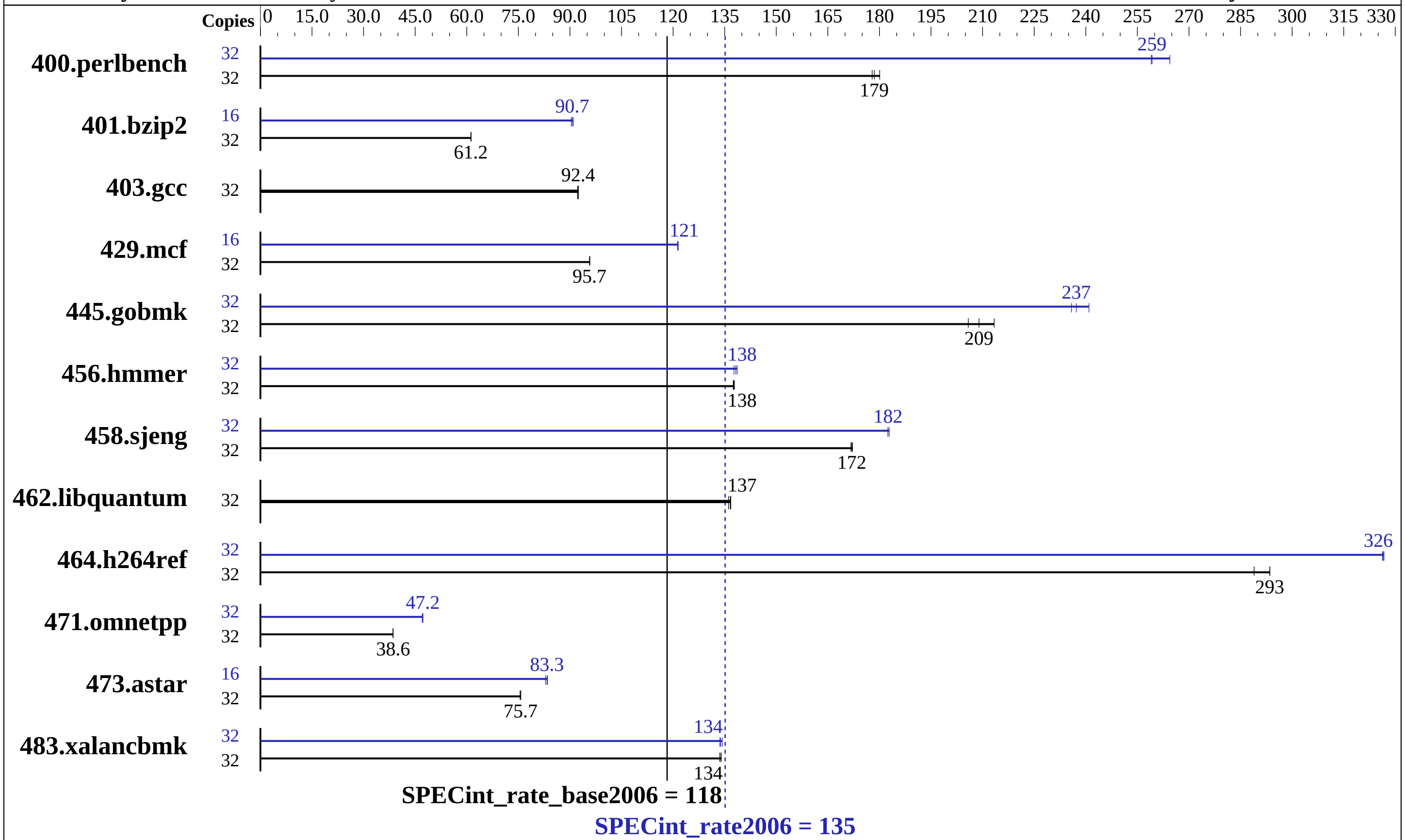
Fujitsu Limited

Fujitsu SPARC Enterprise M4000

SPECint®_rate2006 = 135

SPECint_rate_base2006 = 118

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:	591 GB RAID 5 Sun StorageTek 2540 10 x 73 GB 15K RPM Seagate SAS disks
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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	**1751**	**179**	1736	180	1758	178	32	1182	264	1207	259	**1206**	**259**
401.bzip2	32	**5045**	**61.2**	5047	61.2	5041	61.3	16	**1702**	**90.7**	1708	90.4	1697	91.0
403.gcc	32	2792	92.3	**2787**	**92.4**	2787	92.4	32	2792	92.3	**2787**	**92.4**	2787	92.4
429.mcf	32	3046	95.8	3049	95.7	**3049**	**95.7**	16	**1202**	**121**	1203	121	1201	121
445.gobmk	32	1573	213	1631	206	**1607**	**209**	32	1393	241	1423	236	**1415**	**237**
456.hmmer	32	**2169**	**138**	2171	137	2166	138	32	2168	138	**2160**	**138**	2154	139
458.sjeng	32	**2252**	**172**	2255	172	2249	172	32	2118	183	**2122**	**182**	2122	182
462.libquantum	32	**4853**	**137**	4847	137	4871	136	32	**4853**	**137**	4847	137	4871	136
464.h264ref	32	**2413**	**293**	2412	294	2451	289	32	2168	327	**2169**	**326**	2171	326
471.omnetpp	32	**5181**	**38.6**	5187	38.6	5181	38.6	32	4233	47.3	4251	47.1	**4235**	**47.2**
473.astar	32	2966	75.7	2975	75.5	**2968**	**75.7**	16	1346	83.5	1355	82.9	**1348**	**83.3**
483.xalancbmk	32	**1652**	**134**	1652	134	1647	134	32	**1650**	**134**	1644	134	1653	134

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
```

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

```
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.
```

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Operating System Notes (Continued)

```
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
    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 -xarch=sparcfmaf`
`-xprefetch_level=1 -xalias_level=std -ll2amm`

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

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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 -xpagesize=4M
-xalias_level=std -xipo=2 -xrestrict -fma=fused -lfast

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

403.gcc: basepeak = yes

429.mcf: -fast -xpagesize=4M -xipo=2 -xprefetch=no -xrestrict
-xalias_level=std -lfast

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xalias_level=std -xrestrict -fma=fused -xarch=sparcfmaf
-ll2amm

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Peak Optimization Flags (Continued)

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

458.sjeng: Same as 456.hmmer

462.libquantum: basepeak = yes

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

473.astar: -xdepend -library=stlport4 -fast -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-fma=fused -lfast

483.xalancbmk: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch=no -fma=fused
-lfast

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

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

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