



SPEC® CINT2006 Result

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Fujitsu Limited

SPECint®_rate2006 = 158

Fujitsu SPARC Enterprise M5000

SPECint_rate_base2006 = 134

CPU2006 license: 19

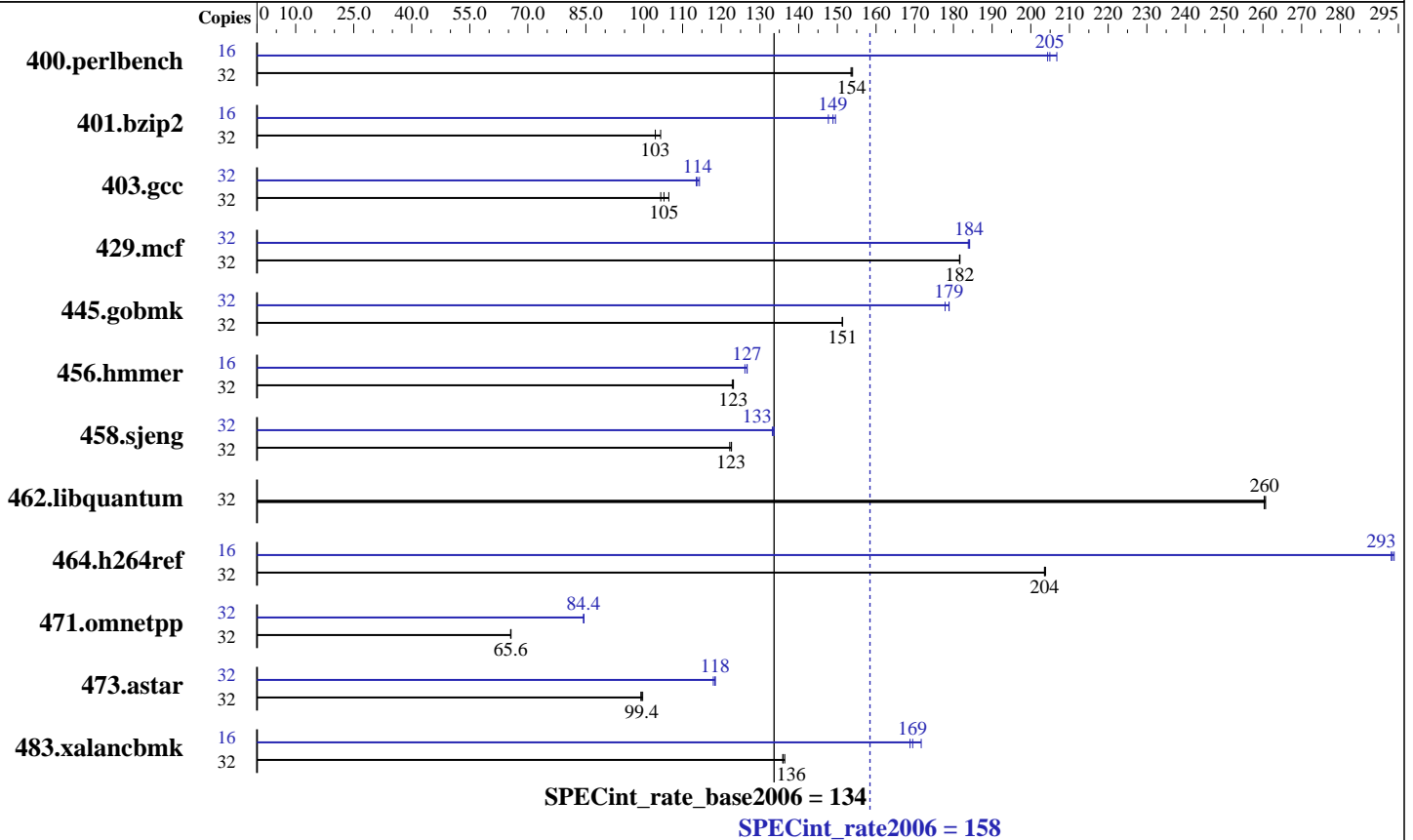
Test date: Apr-2007

Test sponsor: Fujitsu Limited

Hardware Availability: May-2007

Tested by: Sun Microsystems

Software Availability: Jul-2007



Hardware

CPU Name: SPARC64 VI
 CPU Characteristics:
 CPU MHz: 2150
 FPU: Integrated
 CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 1 to 4 CPUM; each CPUM contains 2 CPU chips
 Primary Cache: 128 KB I + 128 KB D on chip per core
 Secondary Cache: 5 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 128 GB (64 x 2 GB)
 Disk Subsystem: 73 GB FUJITSU MAY2073RC 10K RPM SAS
 Other Hardware: None

Software

Operating System: Solaris 10 7/07 (build s10s_u4wos_04)
 Compiler: Sun Studio 12 (build 44.0)
 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	2036	154	2034	154	2031	154	16	756	207	763	205	765	204
401.bzip2	32	2960	104	3000	103	3000	103	16	1046	148	1037	149	1033	150
403.gcc	32	2420	106	2449	105	2469	104	32	2262	114	2252	114	2269	114
429.mcf	32	1606	182	1607	182	1607	182	32	1587	184	1586	184	1584	184
445.gobmk	32	2218	151	2220	151	2218	151	32	1876	179	1887	178	1877	179
456.hammer	32	2431	123	2425	123	2424	123	16	1178	127	1179	127	1184	126
458.sjeng	32	3169	122	3159	123	3157	123	32	2907	133	2903	133	2897	134
462.libquantum	32	2547	260	2543	261	2546	260	32	2547	260	2543	261	2546	260
464.h264ref	32	3479	204	3479	204	3475	204	16	1207	293	1205	294	1208	293
471.omnetpp	32	3049	65.6	3051	65.6	3046	65.7	32	2369	84.4	2367	84.5	2370	84.4
473.astar	32	2259	99.4	2253	99.7	2264	99.2	32	1905	118	1896	118	1898	118
483.xalancbmk	32	1625	136	1623	136	1619	136	16	643	172	654	169	651	169

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

Operating System Notes

Processes were bound to cores using "submit" and "pbind".

These shell commands request use of 4MB pages:

```
export LD_PRELOAD=mpss.so.1
export MPSSHEAP=4MB
export MPSSSTACK=4MB
```

ulimit -s 131072 was used to limit the space consumed by the stack (and therefore make more space available to the heap).

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

Platform Notes

"CPUM" = CPU Module; each module holds two CPU chips.

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

This result was measured using a Sun SPARC Enterprise M5000 Server. Note that the Fujitsu SPARC Enterprise M5000 and Sun SPARC Enterprise M5000 are electrically equivalent.



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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 -xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M
-xprefetch_level=2 -lbsdmalloc

C++ benchmarks:

-xdepend -library=stlport4 -fast -fma=fused
-xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M -xprefetch_level=2
-lbsdmalloc

Base Other Flags

C benchmarks:

-xjobs=12 -V -#

C++ benchmarks:

-xjobs=12 -verbose=diags,version

Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC



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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
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=std -Xc -xipo=2 -xrestrict -fma=fused
-xprefetch=latx:5 -lfast

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=strong -fma=fused -xprefetch=latx:5

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xalias_level=std -xprefetch_level=2 -xarch=v8plusb
-fma=fused -l12amm

429.mcf: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xprefetch_level=2 -xrestrict -xalias_level=std
-W2,-Apf:l1list=3 -W2,-Apf:nominnerl1list -xprefetch=latx:5
-lfast

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -xpagesize=4M
-xalias_level=std -xrestrict -fma=fused

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:5120/256/10 -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
-xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xalias_level=std -xarch=v8plusb -l12amm

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Peak Optimization Flags (Continued)

C++ benchmarks:

```
471.omnetpp: -xdepend -library=stlport4
             -xprofile=collect:./feedback(pass 1)
             -xprofile=use:./feedback(pass 2) -fast
             -xcache=128/64/2:5120/256/10 -xpagesize=4M
             -xalias_level=compatible -xipo=2 -xprefetch_level=2
             -Qoption cg -Qlp-av=0 -fma=fused -lfast
```

```
473.astar: -xdepend -library=stlport4 -fast
           -xcache=128/64/2:5120/256/10 -xpagesize=4M
           -xalias_level=compatible -xipo=2 -xprefetch_level=2
           -fma=fused -xprefetch=latx:5 -lfast
```

```
483.xalancbmk: -xdepend -library=stlport4
               -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast
               -xcache=128/64/2:5120/256/10 -xpagesize=4M
               -xalias_level=compatible -xipo=2 -xprefetch_level=2
               -fma=fused -xprefetch=latx:5 -lfast
```

Peak Other Flags

C benchmarks:

```
-xjobs=12 -V -#
```

C++ benchmarks:

```
-xjobs=12 -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-Studio12.20090714.02.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.02.xml>



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