



SPEC[®] CINT2006 Result

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Fujitsu Limited

SPECint[®]_rate2006 = 352

Fujitsu SPARC Enterprise M8000

SPECint_rate_base2006 = 298

CPU2006 license: 19

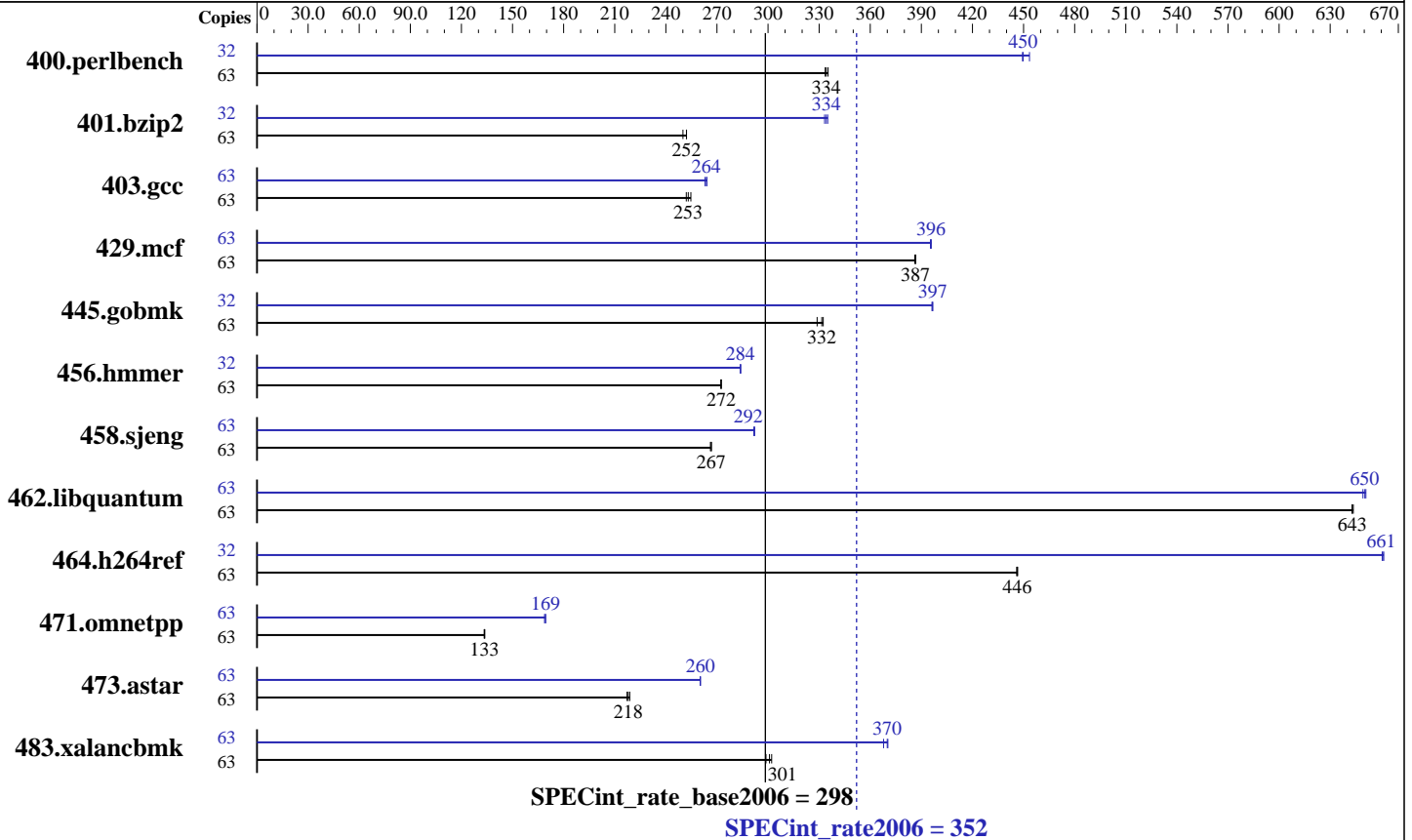
Test date: Apr-2007

Test sponsor: Fujitsu Limited

Hardware Availability: Apr-2007

Tested by: Sun Microsystems

Software Availability: Jul-2007



Hardware

CPU Name: SPARC64 VI
 CPU Characteristics: 2400
 CPU MHz: Integrated
 FPU: 32 cores, 16 chips, 2 cores/chip, 2 threads/core
 CPU(s) enabled: 1 to 4 CMUs; each CMU contains 2 or 4 chips
 CPU(s) orderable: 128 KB I + 128 KB D on chip per core
 Primary Cache: 6 MB I+D on chip per chip
 Secondary Cache: None
 L3 Cache: None
 Other Cache: None
 Memory: 256 GB (128 x 2 GB)
 Disk Subsystem: 400 GB RAID 0 created by Solaris Volume Manager with 12x 36GB 15,000 RPM Seagate ST336754FC FC-AL disks
 Other Hardware: None

Software

Operating System: Solaris 10 7/07 (build s10s_u4wos_03)
 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	63	1842	334	1845	334	1836	335	32	689	453	696	449	695	450
401.bzip2	63	2411	252	2412	252	2431	250	32	927	333	924	334	922	335
403.gcc	63	2012	252	2003	253	1991	255	63	1928	263	1920	264	1922	264
429.mcf	63	1488	386	1486	387	1486	387	63	1452	396	1452	396	1453	395
445.gobmk	63	1993	332	1988	332	2010	329	32	847	396	846	397	846	397
456.hammer	63	2157	273	2159	272	2157	272	32	1052	284	1052	284	1052	284
458.sjeng	63	2864	266	2859	267	2858	267	63	2610	292	2611	292	2614	292
462.libquantum	63	2030	643	2028	644	2031	643	63	2005	651	2007	650	2011	649
464.h264ref	63	3122	447	3124	446	3126	446	32	1072	661	1071	661	1072	661
471.omnetpp	63	2949	133	2952	133	2944	134	63	2333	169	2325	169	2325	169
473.astar	63	2036	217	2029	218	2021	219	63	1699	260	1700	260	1699	260
483.xalancbmk	63	1455	299	1439	302	1445	301	63	1174	370	1182	368	1175	370

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 local 4MB pages:

```
export LD_PRELOAD=madv.so.1:mpss.so.1
export MPSSHEAP=4MB
export MPSSSTACK=4MB
export MADV=access_lwp
```

'access_lwp' means that the next light weight process to touch the specified address range will access it the most heavily.

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

/etc/system parameters

autoup=300

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

tune_t_fsflushr=3

Controls how many seconds elapse between runs of the page flush daemon, fsflush.

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Operating System Notes (Continued)

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

Platform Notes

"CMU" = CPU/Memory Unit; each holds 2 or 4 CPU chips.

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

This result was measured using a Sun 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 -xcache=128/64/2:6144/256/12 -xipo=2 -xpagesize=4M
-xprefetch_level=2 -lbsdmalloc

C++ benchmarks:

-xdepend -library=stlport4 -fast -fma=fused
-xcache=128/64/2:6144/256/12 -xipo=2 -xpagesize=4M -xprefetch_level=2
-lbsdmalloc



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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
-xcache=128/64/2:6144/256/12 -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=128/64/2:6144/256/12 -xpagesize=4M
-xalias_level=strong -fma=fused -xprefetch=latx:5

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:6144/256/12 -xpagesize=4M -xipo=2
-xalias_level=std -xprefetch_level=2 -xarch=v8plusb
-fma=fused -l12amm

429.mcf: -fast -xcache=128/64/2:6144/256/12 -xpagesize=4M -xipo=2
-xprefetch_level=2 -xrestrict -xalias_level=std
-W2,-Apf:l1list=3 -W2,-Apf:noninnerl1list -xprefetch=latx:5

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Peak Optimization Flags (Continued)

429.mcf (continued):
-lfast

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:6144/256/12 -xpagesize=4M
-xalias_level=std -xrestrict -fma=fused

456.hmmcr: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:6144/256/12 -xpagesize=4M -xipo=2
-fma=fused

458.sjeng: Same as 456.hmmcr

462.libquantum: -fast -xcache=128/64/2:6144/256/12 -xpagesize=4M -xipo=2
-xprefetch_level=2 -fma=fused -xprefetch=latx:3
-lbsdmalloc

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:6144/256/12 -xpagesize=4M -xipo=2
-xalias_level=std -xarch=v8plusb -l12amm

C++ benchmarks:

471.omnetpp: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast
-xcache=128/64/2:6144/256/12 -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=128/64/2:6144/256/12 -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=128/64/2:6144/256/12 -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-fma=fused -xprefetch=latx:5 -lfast



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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-Studio12.20090714.02.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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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.1.
Report generated on Tue Jul 22 11:13:27 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 May 2007.