SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Fujitsu Limited

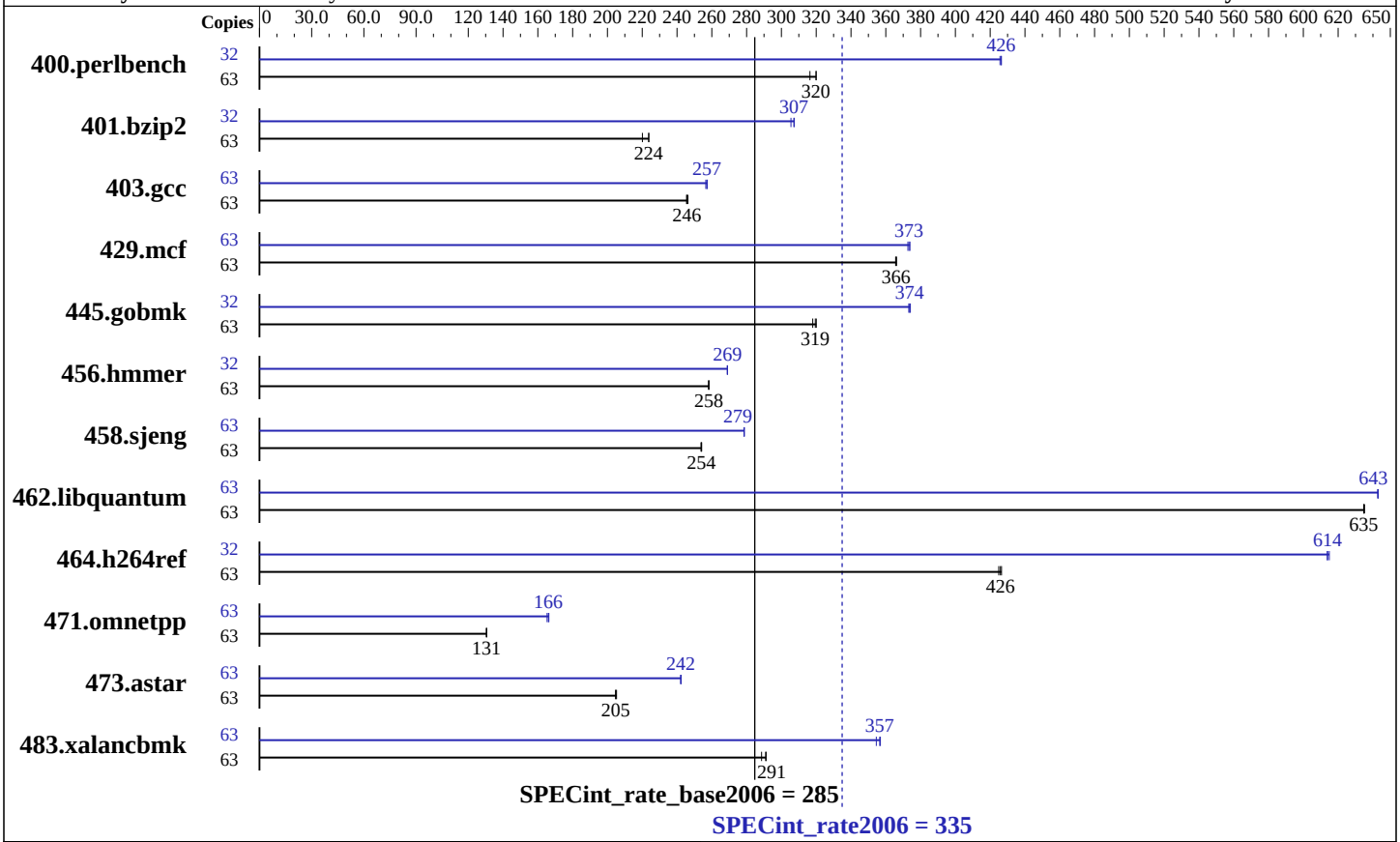
Fujitsu SPARC Enterprise M8000

SPECint®_rate2006 = 335

SPECint_rate_base2006 = 285

CPU2006 license: 19
Test sponsor: Fujitsu Limited
Tested by: Sun Microsystems

Test date: Mar-2007
Hardware Availability: Apr-2007
Software Availability: Jul-2007



Hardware

CPU Name:	SPARC64 VI
CPU Characteristics:	
CPU MHz:	2280
FPU:	Integrated
CPU(s) enabled:	32 cores, 16 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 4 CMUs; each CMU contains 2 or 4 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:	256 GB (128 x 2 GB)
Disk Subsystem:	400 GB Solaris Volume Manager RAID0 soft partition (see notes for details)
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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	63	1945	316	**1924**	**320**	1924	320	32	735	426	**733**	**426**	733	426
401.bzip2	63	2762	220	**2718**	**224**	2717	224	32	**1005**	**307**	1011	305	1004	307
403.gcc	63	2059	246	**2065**	**246**	2066	246	63	1977	257	**1973**	**257**	1971	257
429.mcf	63	1571	366	1569	366	**1570**	**366**	63	**1539**	**373**	1542	373	1537	374
445.gobmk	63	2078	318	**2069**	**319**	2065	320	32	897	374	**898**	**374**	899	373
456.hmmer	63	2277	258	**2276**	**258**	2275	258	32	1110	269	1110	269	**1110**	**269**
458.sjeng	63	**3001**	**254**	3004	254	2999	254	63	2736	279	2737	279	**2737**	**279**
462.libquantum	63	2055	635	2057	635	**2056**	**635**	63	2030	643	**2030**	**643**	2031	643
464.h264ref	63	3281	425	**3274**	**426**	3269	427	32	1152	615	1154	614	**1153**	**614**
471.omnetpp	63	3018	130	3017	131	**3017**	**131**	63	2382	165	2367	166	**2371**	**166**
473.astar	63	2160	205	**2160**	**205**	2155	205	63	1827	242	1825	242	**1826**	**242**
483.xalancbmk	63	1506	289	**1494**	**291**	1493	291	63	1218	357	**1219**	**357**	1226	355

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".
The SPEC toolset was bound to processor 0.

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.
```

Continued on next page

Operating System Notes (Continued)

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

Platform Notes

```
Disk notes: The SPEC CPU tests use a 400 GB partition
created from 3x Sun StorageTek 6140 stripe sets.  The
partition was created in 3 steps: 1. Each 6140 stripe
set (RAID 0) is based on 8x 146 GB 15,000 RPM Seagate
ST3146954FC FC-AL disks.  2. Solaris views these as 3
logical units (LUNs) which are striped together (RAID
0) to make a 3 TB volume using Solaris Volume Manager
(SVM).  3. Lastly, SVM is then used to create one 400
GB soft partition for use by the CPU2006 output_root.

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

Continued on next page

Peak Optimization Flags (Continued)

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 -ll2amm

429.mcf: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xprefetch_level=2 -xrestrict -xalias_level=std
-W2,-Apf:llist=3 -W2,-Apf:noinnerllist -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: -fast -xcache=128/64/2:5120/256/10 -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=128/64/2:5120/256/10 -xpagesize=4M -xipo=2
-xalias_level=std -xarch=v8plusb -ll2amm

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

Continued on next page

Peak Optimization Flags (Continued)

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=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`

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.0.1.
Report generated on Tue Jul 22 11:14:09 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 May 2007.