



SPEC® CINT2006 Result

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Sun Microsystems

SPECint®_rate2006 = 650

Sun SPARC Enterprise M9000

SPECint_rate_base2006 = 553

CPU2006 license: 6

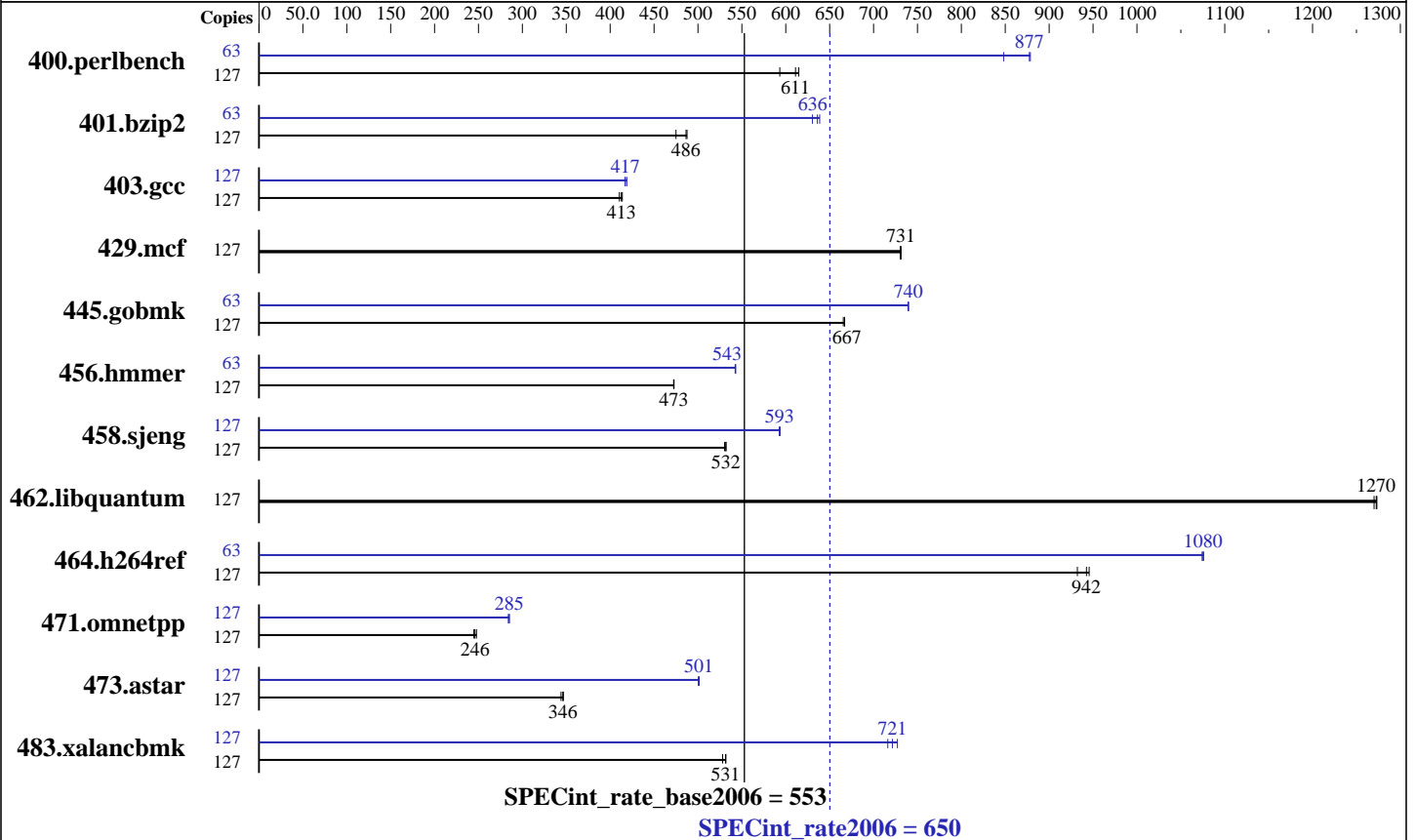
Test sponsor: Sun Microsystems

Tested by: Fujitsu Limited

Test date: Apr-2007

Hardware Availability: Apr-2007

Software Availability: May-2007



Hardware

CPU Name: SPARC64 VI
 CPU Characteristics:
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 64 cores, 32 chips, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 1 to 8 CMUs; each CMU contains 2 or 4 chips
 Primary Cache: 128 KB I + 128 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 256 GB (256 x 1 GB)
 Disk Subsystem: 1095 GB RAID 0 using 15 x 73GB
 10,000 RPM Fujitsu ETERNUS4000 Model 80
 Other Hardware: None

Software

Operating System: Solaris 10 11/06
 Compiler: Sun Studio 12 (Early Access)
 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	127	2092	593	2018	615	2030	611	63	726	848	701	879	701	877		
401.bzip2	127	2580	475	2520	486	2514	488	63	964	630	956	636	952	639		
403.gcc	127	2491	410	2477	413	2470	414	127	2450	417	2440	419	2453	417		
429.mcf	127	1586	730	1584	731	1584	731	127	1586	730	1584	731	1584	731		
445.gobmk	127	1997	667	2002	666	1997	667	63	893	740	894	740	894	739		
456.hammer	127	2508	473	2506	473	2509	472	63	1084	542	1083	543	1083	543		
458.sjeng	127	2890	532	2888	532	2898	530	127	2593	593	2589	593	2591	593		
462.libquantum	127	2067	1270	2068	1270	2072	1270	127	2067	1270	2068	1270	2072	1270		
464.h264ref	127	2972	946	2982	942	3015	932	63	1296	1080	1298	1070	1297	1080		
471.omnetpp	127	3243	245	3204	248	3227	246	127	2784	285	2785	285	2795	284		
473.astar	127	2591	344	2571	347	2576	346	127	1778	501	1779	501	1781	500		
483.xalancbmk	127	1649	531	1659	528	1648	532	127	1224	716	1205	727	1215	721		

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:

```

MPSSHEAP=4MB
MPSSSTACK=4MB
MADV=access_lwp
LD_PRELOAD=mpss.so.1:adv.so.1

```

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

Stack size set to unlimited via "ulimit -s unlimited"

System Tunables:

(/etc/system parameters)

maxphys=4194304

Defines the maximum size of I/O requests, in bytes.

maxpgio=1024

Defines the maximum number of page I/O requests that can be queued by the paging system.

tune_t_fsflushr=30

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

autoup=300

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

Platform Notes

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

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

This result is measured on a Fujitsu SPARC Enterprise M9000 Server. Note that the Fujitsu SPARC Enterprise M9000 and Sun SPARC Enterprise M9000 are electrically equivalent.

Base Compiler Invocation

C benchmarks:

/opt/SUNWspr012_EA070303/bin/cc

C++ benchmarks:

/opt/SUNWspr012_EA070303/bin/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 -xipo=2 -xtarget=sparc64vi -xcache=128/64/2:6144/256/12

-xarch=sparcfmaf -fma=fused -Wc,-fma=fused -xprefetch_level=2

C++ benchmarks:

-library=stlport4 -fast -xipo=2 -xtarget=sparc64vi

-xcache=128/64/2:6144/256/12 -xarch=sparcfmaf -fma=fused

-Qoption cg -fma=fused -xprefetch_level=2



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Peak Compiler Invocation

C benchmarks:

/opt/SUNWspr012_EA070303/bin/cc

C++ benchmarks:

/opt/SUNWspr012_EA070303/bin/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 -xipo=2
-xtarget=sparc64vi -xcache=128/64/2:6144/256/12
-xarch=sparcfmaf -fma=fused -Wc,-fma=fused
-xprefetch_level=2 -xalias_level=std -xrestrict -lfast

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xcache=128/64/2:6144/256/12
-xarch=sparcfmaf -fma=fused -Wc,-fma=fused
-xalias_level=strong

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xcache=128/64/2:6144/256/12
-xarch=sparcfmaf -fma=fused -Wc,-fma=fused
-xalias_level=std

429.mcf: basepeak = yes

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xcache=128/64/2:6144/256/12
-xarch=sparcfmaf -fma=fused -Wc,-fma=fused

456.hmmr: Same as 403.gcc

458.sjeng: Same as 445.gobmk

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: Same as 403.gcc

C++ benchmarks:

471.omnetpp: -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xcache=128/64/2:6144/256/12
-xarch=sparcfmaf -fma=fused -Qoption cg -fma=fused

473.astar: -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xcache=128/64/2:6144/256/12
-xarch=sparcfmaf -fma=fused -Qoption cg -fma=fused
-xalias_level=compatible -lfast

483.xalancbmk: -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xcache=128/64/2:6144/256/12
-xarch=sparcfmaf -fma=fused -Qoption cg -fma=fused -lfast

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

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 11:34:20 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 May 2007.