SPEC® CINT2006 Result

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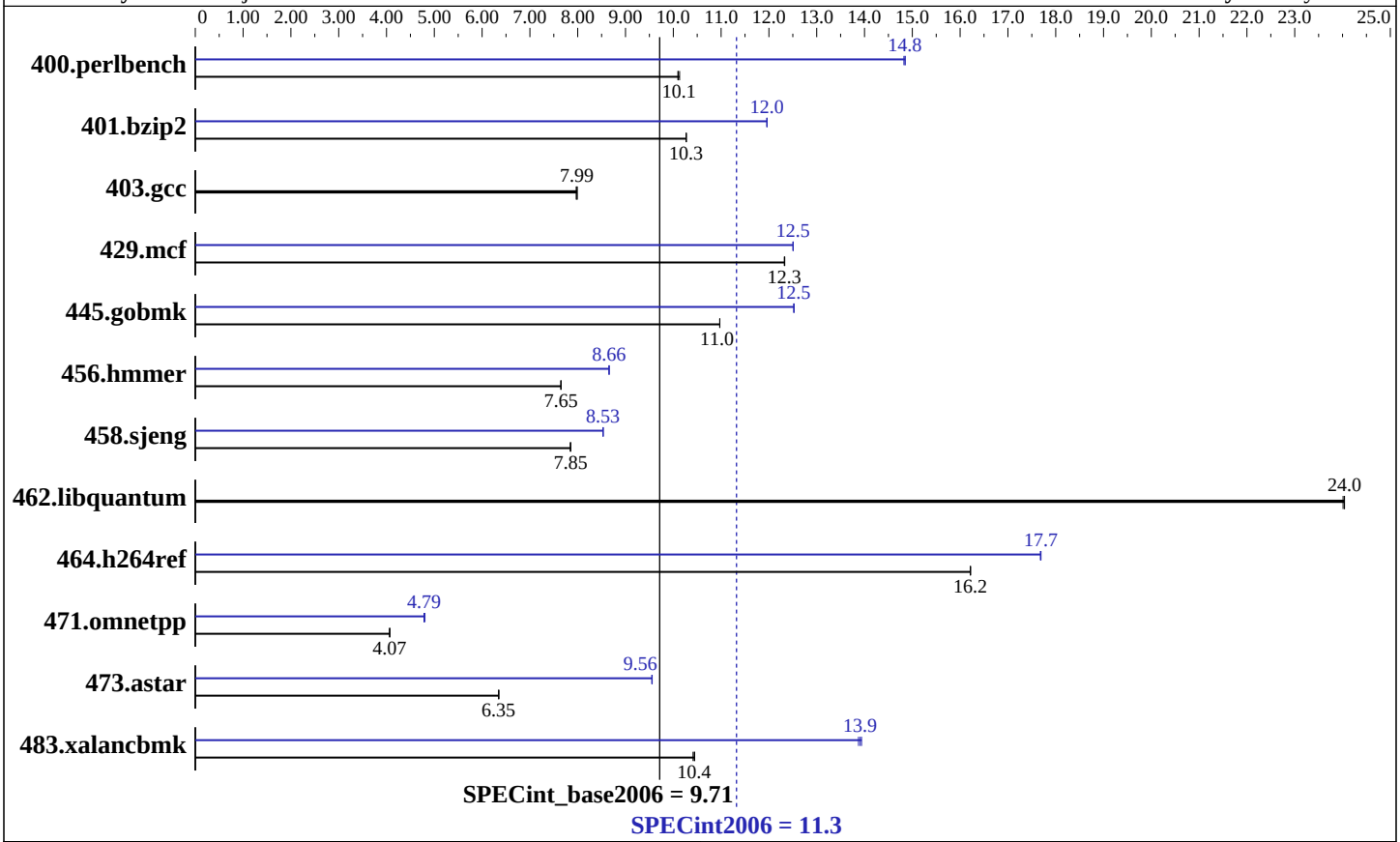
Sun Microsystems
Sun SPARC Enterprise M8000

SPECint®2006 = 11.3

SPECint_base2006 = 9.71

CPU2006 license: 6
Test sponsor: Sun Microsystems
Tested by: Fujitsu Limited

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



Hardware

CPU Name:	SPARC64 VI
CPU Characteristics:	
CPU MHz:	2400
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:	6 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	64 GB (64 x 1 GB, see notes for details)
Disk Subsystem:	73 GB 10,000 RPM Fujitsu MAY2073RC SAS
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	964	10.1	967	10.1	**967**	**10.1**	**658**	**14.8**	658	14.9	659	14.8
401.bzip2	940	10.3	940	10.3	**940**	**10.3**	807	12.0	807	12.0	**807**	**12.0**
403.gcc	**1008**	**7.99**	1010	7.97	1008	7.99	**1008**	**7.99**	1010	7.97	1008	7.99
429.mcf	740	12.3	**740**	**12.3**	740	12.3	729	12.5	**729**	**12.5**	730	12.5
445.gobmk	956	11.0	956	11.0	**956**	**11.0**	838	12.5	838	12.5	**838**	**12.5**
456.hmmer	1220	7.65	**1220**	**7.65**	1220	7.65	1078	8.66	1078	8.66	**1078**	**8.66**
458.sjeng	1542	7.85	**1541**	**7.85**	1541	7.85	**1418**	**8.53**	1418	8.53	1418	8.53
462.libquantum	863	24.0	**862**	**24.0**	862	24.0	863	24.0	**862**	**24.0**	862	24.0
464.h264ref	1365	16.2	**1365**	**16.2**	1364	16.2	1251	17.7	**1251**	**17.7**	1252	17.7
471.omnetpp	1538	4.06	**1536**	**4.07**	1536	4.07	1307	4.78	1301	4.80	**1306**	**4.79**
473.astar	**1106**	**6.35**	1106	6.35	1106	6.35	735	9.55	**735**	**9.56**	734	9.56
483.xalancbmk	**661**	**10.4**	660	10.4	663	10.4	495	13.9	497	13.9	**496**	**13.9**

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

Operating System Notes

```
These shell commands request use of local 4MB pages:
      MPSSHEAP=4MB
      MPSSSTACK=4MB
      MADV=access_lwp
      LD_PRELOAD=mpss.so.1:madv.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"

The run was bound to processor #27 using the "psrset" command
    psrset -c processor id...: creates a set
    psrset -e set_id command:  runs command on a set


 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=1
       Controls how many seconds elapse between runs of the
       page flush daemon, fsflush.
    autoup=60
```

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Operating System Notes (Continued)

```
      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
```

Platform Notes

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

Memory was 8-way interleaved by filling same capacity
DIMMs in every other slot

This result is measured on a Fujitsu SPARC Enterprise
M8000 Server.  Note that the Fujitsu SPARC Enterprise
M8000 and Sun SPARC Enterprise M8000 are electrically
equivalent.
```

Base Compiler Invocation

C benchmarks:
```
/opt/SUNWspro12_EA070303/bin/cc
```

C++ benchmarks:
```
/opt/SUNWspro12_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
```

Peak Compiler Invocation

C benchmarks:
/opt/SUNWspro12_EA070303/bin/cc

C++ benchmarks:
/opt/SUNWspro12_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: basepeak = yes

429.mcf: -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=3 -W2,-Apf:llist=3 -W2,-Apf:noinnerllist

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.hmmer: -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

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Peak Optimization Flags (Continued)

458.sjeng: Same as 445.gobmk

462.libquantum: basepeak = yes

464.h264ref: Same as 456.hmmer

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 other inquiries, please contact webmaster@spec.org.

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