SPEC® CINT2006 Result
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Sun Microsystems
Sun Fire X2200 M2

SPECint®_rate2006 = 46.7
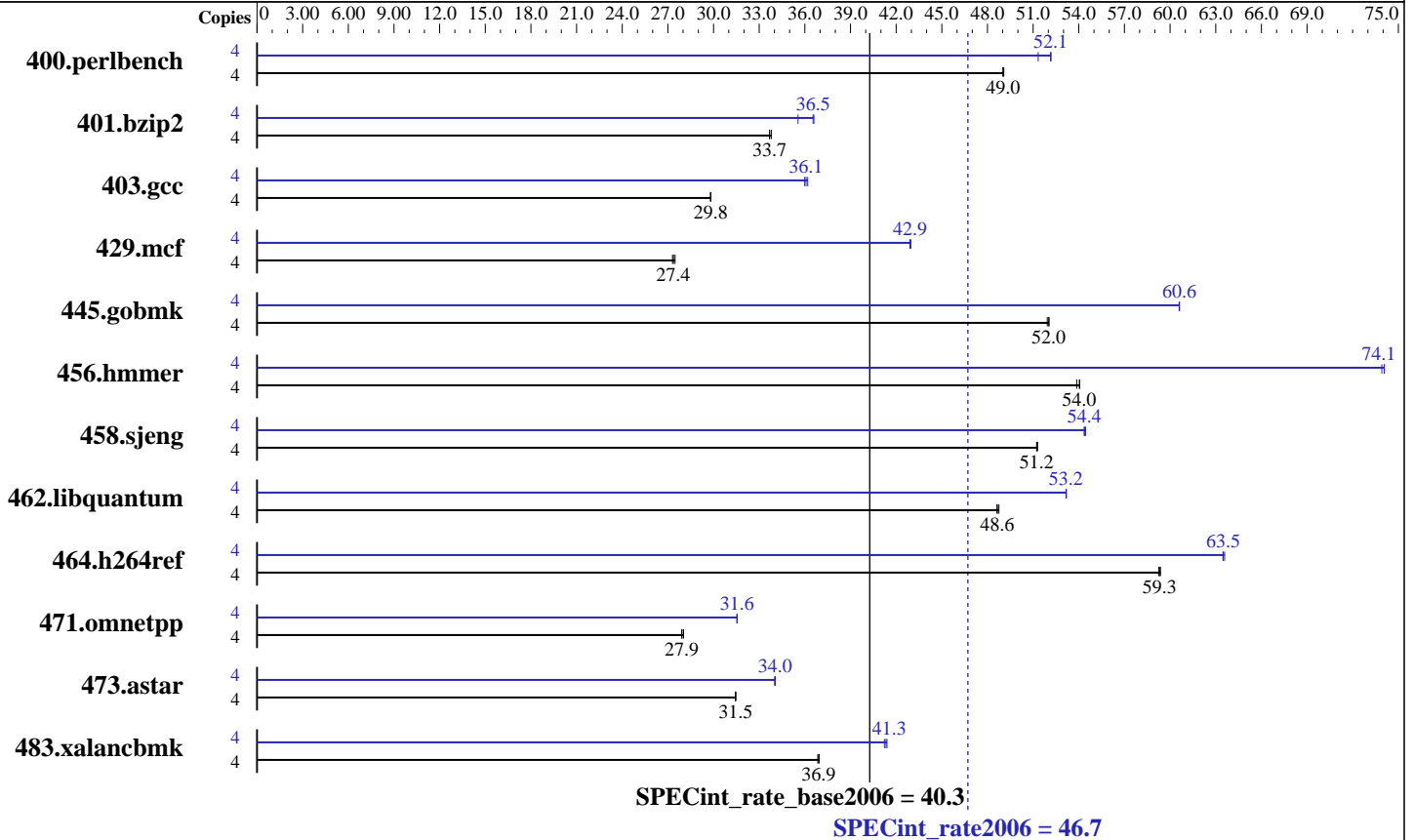
SPECint_rate_base2006 = 40.3

CPU2006 license: 6　　　　　　　　　　　　　　　　　　　　　**Test date:** Nov-2006
Test sponsor: Sun Microsystems　　　　　　　　　　　　　**Hardware Availability:** Aug-2006
Tested by: Sun Microsystems　　　　　　　　　　　　　　**Software Availability:** Jul-2006

Benchmark	Copies	Peak	Base
400.perlbench	4	52.1	49.0
401.bzip2	4	36.5	33.7
403.gcc	4	36.1	29.8
429.mcf	4	42.9	27.4
445.gobmk	4	60.6	52.0
456.hmmer	4	74.1	54.0
458.sjeng	4	54.4	51.2
462.libquantum	4	53.2	48.6
464.h264ref	4	63.5	59.3
471.omnetpp	4	31.6	27.9
473.astar	4	34.0	31.5
483.xalancbmk	4	41.3	36.9

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Hardware
CPU Name:	AMD Opteron 2218
CPU Characteristics:	
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8x2GB, DDR2-667 CL5 ECC REG, Dual Rank)
Disk Subsystem:	SATA, 250 GB, 7200 RPM
Other Hardware:	None

Software
Operating System:	Solaris 10 6/06
Compiler:	Sun Studio 11 with Patches
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	796	49.1	**797**	**49.0**	797	49.0	4	749	52.2	761	51.3	**749**	**52.1**
401.bzip2	4	1142	33.8	**1146**	**33.7**	1146	33.7	4	1086	35.5	**1056**	**36.5**	1055	36.6
403.gcc	4	1080	29.8	**1080**	**29.8**	1080	29.8	4	**892**	**36.1**	895	36.0	890	36.2
429.mcf	4	**1333**	**27.4**	1336	27.3	1328	27.5	4	849	43.0	850	42.9	**850**	**42.9**
445.gobmk	4	**806**	**52.0**	806	52.0	808	51.9	4	692	60.6	**692**	**60.6**	692	60.6
456.hmmer	4	693	53.9	690	54.1	**691**	**54.0**	4	505	73.9	504	74.1	**504**	**74.1**
458.sjeng	4	944	51.3	945	51.2	**945**	**51.2**	4	889	54.4	**890**	**54.4**	890	54.4
462.libquantum	4	1704	48.6	**1704**	**48.6**	1700	48.8	4	1558	53.2	**1559**	**53.2**	1559	53.2
464.h264ref	4	1491	59.4	1494	59.3	**1493**	**59.3**	4	**1394**	**63.5**	1392	63.6	1395	63.5
471.omnetpp	4	895	27.9	**895**	**27.9**	892	28.0	4	792	31.6	**792**	**31.6**	793	31.5
473.astar	4	892	31.5	**893**	**31.5**	893	31.4	4	826	34.0	824	34.1	**825**	**34.0**
483.xalancbmk	4	749	36.9	**748**	**36.9**	747	36.9	4	669	41.2	**668**	**41.3**	667	41.4

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".


    ulimit -s 131072  (shell): increases stack


    The following patches were applied to Sun Studio 11 compiler:
    120759-07 : x86/x64
    121016-03 : x86 C
    121020-03 : x86 F90
    121018-03 : x86 C++
```

Platform Notes

```
    Default BIOS settings was used.
```

Base Compiler Invocation

C benchmarks:
```
    cc
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
    CC

Base Portability Flags

           400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS_X64
               401.bzip2: -DSPEC_CPU_LP64
                 403.gcc: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
                 429.mcf: -DSPEC_CPU_LP64
               445.gobmk: -DSPEC_CPU_LP64
               456.hmmer: -DSPEC_CPU_LP64
               458.sjeng: -DSPEC_CPU_LP64
          462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
              464.h264ref: -DSPEC_CPU_LP64
             471.omnetpp: -DSPEC_CPU_LP64
               473.astar: -DSPEC_CPU_LP64
          483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS

Base Optimization Flags

C benchmarks:
    -fast -xipo=2 -xarch=amd64a

C++ benchmarks:
    -fast -xipo=2 -xarch=amd64a -library=stlport4

Base Other Flags

C benchmarks:
    -V

C++ benchmarks:
    -verbose=version

Peak Compiler Invocation

C benchmarks:
    cc

C++ benchmarks:
    CC

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Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS_X64
       403.gcc: -DSPEC_CPU_SOLARIS
462.libquantum: -DSPEC_CPU_SOLARIS
 483.xalancbmk: -DSPEC_CPU_SOLARIS
```

Peak Optimization Flags

C benchmarks:

```
400.perlbench: -fast -xarch=amd64a -xvector=simd -lbsdmalloc
       -Wu,-fsimple=3

   401.bzip2: ONESTEP -xprofile=collect:./feedback(pass 1)
       -xprofile=use:./feedback(pass 2) -fast -xpagesize=2m
       -xipo=2 -xalias_level=strong -xarch=sse2a
       -M /usr/lib/ld/map.bssalign -Wu,-fsimple=3

     403.gcc: -xprofile=collect:./feedback(pass 1)
       -xprofile=use:./feedback(pass 2) -fast -xipo=2
       -xbuiltin=%none -xpagesize=2m -lmvec

     429.mcf: -fast -xpagesize=2m -xalias_level=std
       -M /usr/lib/ld/map.bssalign -lmvec

   445.gobmk: -xprofile=collect:./feedback(pass 1)
       -xprofile=use:./feedback(pass 2) -fast -xarch=amd64a
       -xrestrict -xalias_level=strong -xdepend -xpagesize=2m
       -lmvec

   456.hmmer: -xprofile=collect:./feedback(pass 1)
       -xprofile=use:./feedback(pass 2) -fast -xarch=amd64a
       -Wd,-iropt-prof

   458.sjeng: -fast -xarch=amd64a -xipo=2 -xprefetch=auto
       -xprefetch_level=3 -xpagesize=2m -lmvec

462.libquantum: -xprofile=collect:./feedback(pass 1)
       -xprofile=use:./feedback(pass 2) -fast -xarch=amd64a
       -xipo=2 -xunroll=8

   464.h264ref: -fast -xarch=amd64a -xipo=2 -xvector -xunroll=8
       -xalias_level=strong -xrestrict -xpagesize=2m -lmvec
```

C++ benchmarks:

```
   471.omnetpp: -fast -xipo=2 -xprefetch_level=3 -xpagesize=2m
       -xarch=sse2a -Qoption ube -fsimple=3 -library=stlport4
```

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Peak Optimization Flags (Continued)

473.astar: `-fast -xrestrict -xarch=amd64a -xipo=2 -xprefetch_level=3`
`-xpagesize=2m -library=stlport4`

483.xalancbmk: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xipo=2`
`-xarch=sse2a -xpagesize=2m -library=stlport4`

Peak Other Flags

C benchmarks:
   `-V`

C++ benchmarks:
   `-verbose=version`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio-Opteron.20090715.01.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio-Opteron.20090715.01.xml`

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

Tested with SPEC CPU2006 v1.0.
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