SPEC® CINT2006 Result
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Sun Microsystems
Sun Blade X8420

SPECint®_rate2006 = 93.1
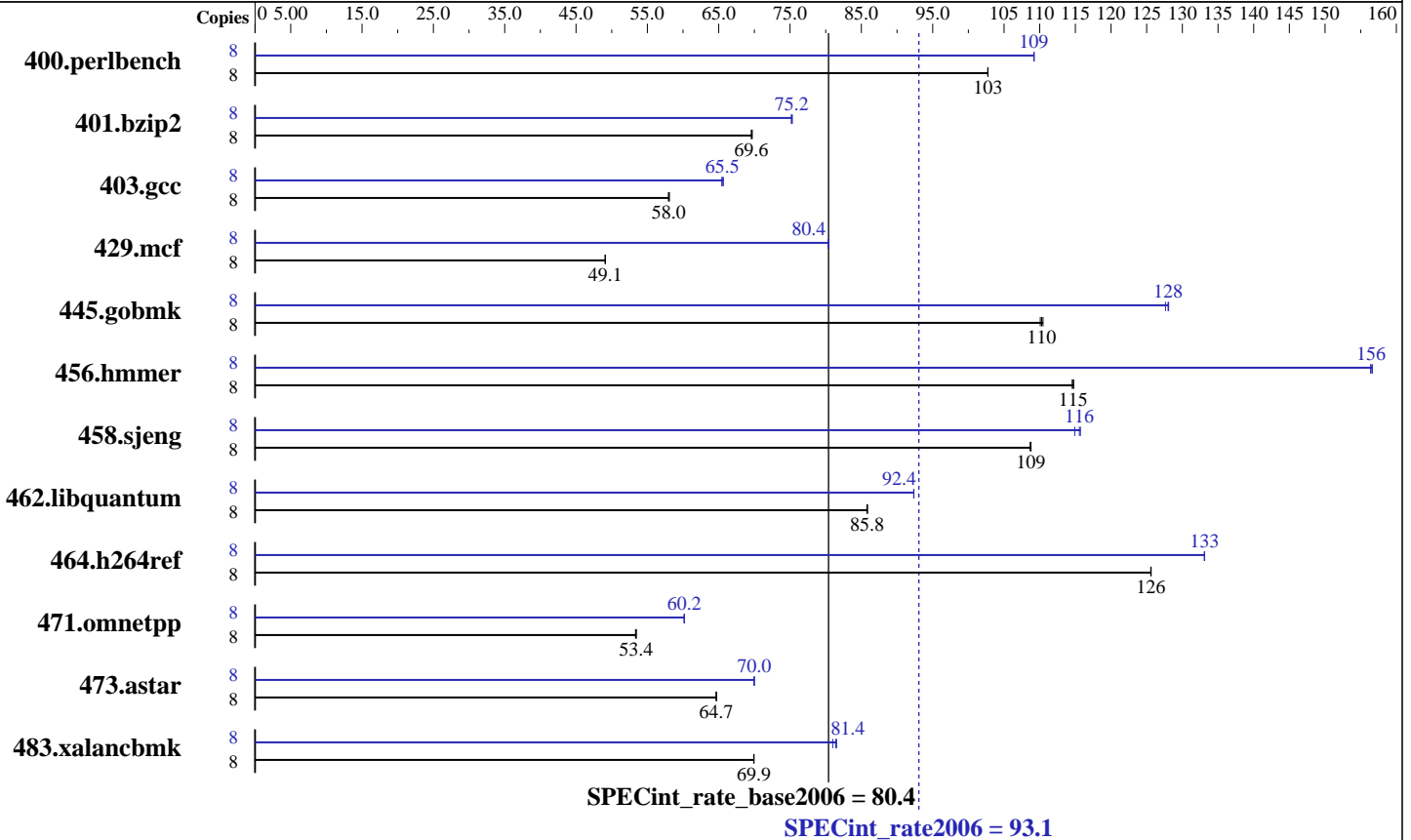
SPECint_rate_base2006 = 80.4

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

Test date: Jan-2007
Hardware Availability: Feb-2007
Software Availability: Jul-2006

	400.perlbench	8 / 8	109 / 103
	401.bzip2	8 / 8	75.2 / 69.6
	403.gcc	8 / 8	65.5 / 58.0
	429.mcf	8 / 8	80.4 / 49.1
	445.gobmk	8 / 8	128 / 110
	456.hmmer	8 / 8	156 / 115
	458.sjeng	8 / 8	116 / 109
	462.libquantum	8 / 8	92.4 / 85.8
	464.h264ref	8 / 8	133 / 126
	471.omnetpp	8 / 8	60.2 / 53.4
	473.astar	8 / 8	70.0 / 64.7
	483.xalancbmk	8 / 8	81.4 / 69.9

SPECint_rate_base2006 = 80.4
SPECint_rate2006 = 93.1

Hardware
CPU Name: AMD Opteron 8220
CPU Characteristics:
CPU MHz: 2800
FPU: Integrated
CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
CPU(s) orderable: 4 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: 64 GB (16x4GB, DDR2-667 CL5 ECC REG Quad Rank)
Disk Subsystem: SAS,72 GB,10K 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							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	761	103	761	103	**761**	**103**	8	716	109	**716**	**109**	716	109
401.bzip2	8	1108	69.7	**1109**	**69.6**	1109	69.6	8	1025	75.3	1027	75.2	**1026**	**75.2**
403.gcc	8	1111	58.0	1109	58.1	**1111**	**58.0**	8	981	65.7	**983**	**65.5**	984	65.4
429.mcf	8	1486	49.1	1486	49.1	**1486**	**49.1**	8	**908**	**80.4**	908	80.4	907	80.4
445.gobmk	8	762	110	**761**	**110**	760	110	8	655	128	**656**	**128**	657	128
456.hmmer	8	**651**	**115**	652	115	650	115	8	477	156	**477**	**156**	476	157
458.sjeng	8	891	109	**890**	**109**	890	109	8	837	116	**838**	**116**	842	115
462.libquantum	8	1932	85.8	**1931**	**85.8**	1931	85.9	8	1795	92.3	**1795**	**92.4**	1795	92.4
464.h264ref	8	1410	126	**1410**	**126**	1409	126	8	1330	133	**1330**	**133**	1330	133
471.omnetpp	8	936	53.4	937	53.3	**936**	**53.4**	8	831	60.2	**831**	**60.2**	831	60.2
473.astar	8	868	64.7	**868**	**64.7**	869	64.6	8	803	70.0	**802**	**70.0**	802	70.0
483.xalancbmk	8	789	69.9	789	69.9	**789**	**69.9**	8	677	81.5	682	81.0	**678**	**81.4**

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
```

C++ benchmarks:
```
    CC
```

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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
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS_X64
      403.gcc: -DSPEC_CPU_SOLARIS
```

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Peak Portability Flags (Continued)

```
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

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

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Peak Optimization Flags (Continued)

```
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

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