SPEC® CINT2006 Result
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Sun Microsystems
Sun Blade T6320

SPECint®_rate2006 =   85.5
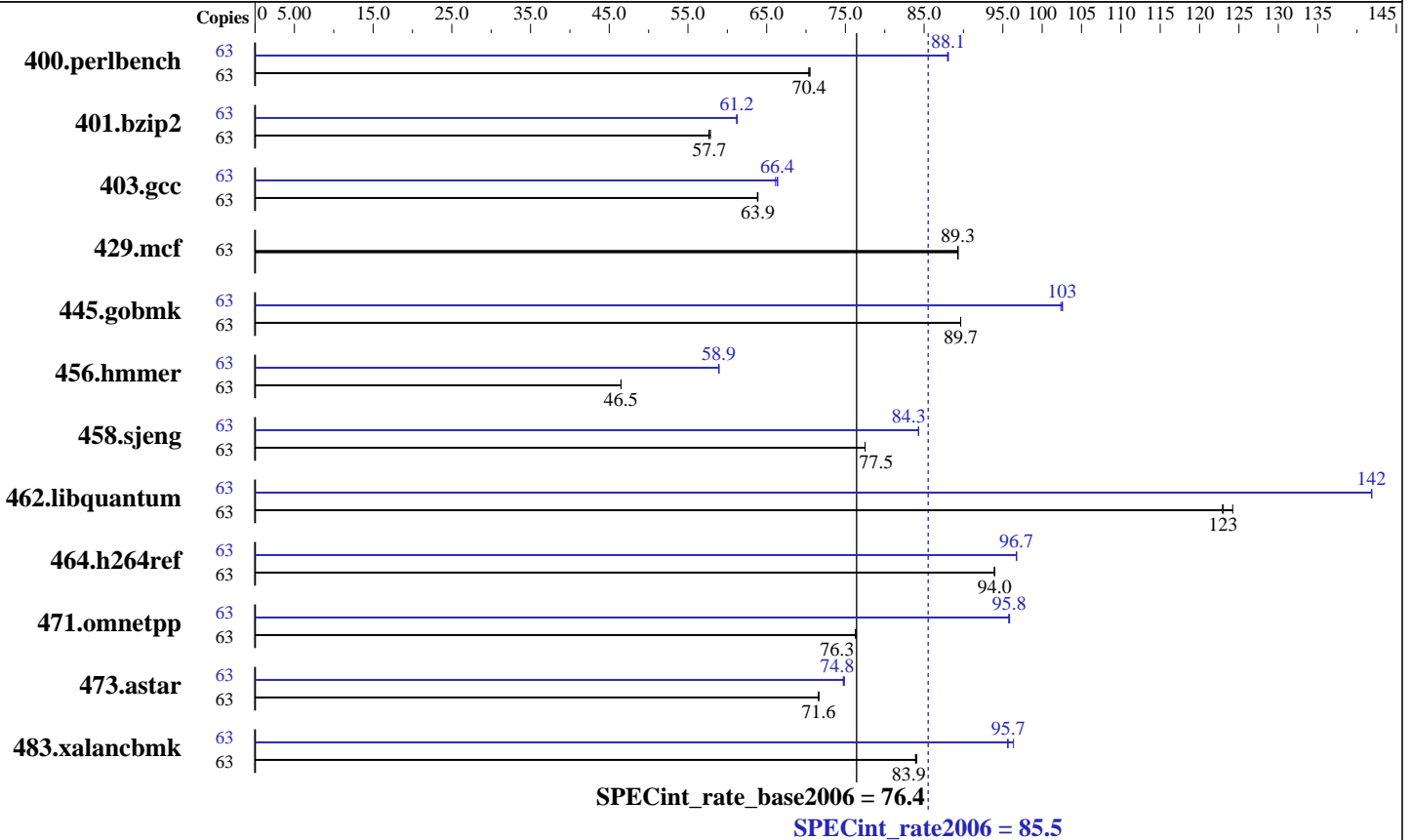
SPECint_rate_base2006 = 76.4

CPU2006 license: 6　　　　　　　　　　　　　　　　　　　　　　　**Test date:**　　　　Feb-2008
Test sponsor: Sun Microsystems　　　　　　　　　　　　　　**Hardware Availability:** Feb-2008
Tested by:　　Sun Microsystems　　　　　　　　　　　　　**Software Availability:** Feb-2008

Benchmark	Copies	Base	Peak
400.perlbench	63 / 63	70.4	88.1
401.bzip2	63 / 63	57.7	61.2
403.gcc	63 / 63	63.9	66.4
429.mcf	63	89.3	
445.gobmk	63 / 63	89.7	103
456.hmmer	63 / 63	46.5	58.9
458.sjeng	63 / 63	77.5	84.3
462.libquantum	63 / 63	123	142
464.h264ref	63 / 63	94.0	96.7
471.omnetpp	63 / 63	76.3	95.8
473.astar	63 / 63	71.6	74.8
483.xalancbmk	63 / 63	83.9	95.7

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Hardware
CPU Name:　　　　　　UltraSPARC T2
CPU Characteristics:
CPU MHz:　　　　　　1417
FPU:　　　　　　　　Integrated
CPU(s) enabled:　　　8 cores, 1 chip, 8 cores/chip, 8 threads/core
CPU(s) orderable:　　1 chips
Primary Cache:　　　16 KB I + 8 KB D on chip per core
Secondary Cache:　　4 MB I+D on chip per chip
L3 Cache:　　　　　None
Other Cache:　　　　None
Memory:　　　　　　64 GB (16 x 4 GB)
Disk Subsystem:　　　330 GB Solaris Volume Manager
　　　　　　　　　　RAID 0, interlace 384 KB, on
　　　　　　　　　　3 x SUN146G 10K RPM SAS disks;
　　　　　　　　　　ufs fragment size 8192 bytes
Other Hardware:　　　None

Software
Operating System:　　Solaris 10 8/07 + patches (see notes)
Compiler:　　　　　　Sun Studio 12 (see patch information below)
　　　　　　　　　　gccfss V4.2.0 (see additional detail below)
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 Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	63	8748	70.4	8729	70.5	**8744**	**70.4**	63	6996	88.0	**6990**	**88.1**	6988	88.1
401.bzip2	63	**10534**	**57.7**	10507	57.9	10542	57.7	63	**9934**	**61.2**	9922	61.3	9935	61.2
403.gcc	63	7938	63.9	**7941**	**63.9**	7946	63.8	63	7639	66.4	7670	66.1	**7642**	**66.4**
429.mcf	63	6432	89.3	6436	89.3	**6434**	**89.3**	63	6432	89.3	6436	89.3	**6434**	**89.3**
445.gobmk	63	7373	89.6	7372	89.7	**7372**	**89.7**	63	6442	103	**6444**	**103**	6456	102
456.hmmer	63	12643	46.5	**12641**	**46.5**	12641	46.5	63	**9974**	**58.9**	9972	58.9	9977	58.9
458.sjeng	63	9836	77.5	9835	77.5	**9836**	**77.5**	63	**9043**	**84.3**	9044	84.3	9043	84.3
462.libquantum	63	10620	123	**10611**	**123**	10509	124	63	9203	142	9200	142	**9203**	**142**
464.h264ref	63	**14839**	**94.0**	14838	94.0	14842	93.9	63	**14413**	**96.7**	14410	96.7	14414	96.7
471.omnetpp	63	5157	76.3	5163	76.3	**5160**	**76.3**	63	**4109**	**95.8**	4112	95.8	4107	95.9
473.astar	63	6174	71.6	**6175**	**71.6**	6179	71.6	63	5917	74.7	**5916**	**74.8**	5906	74.9
483.xalancbmk	63	**5178**	**83.9**	5181	83.9	5170	84.1	63	**4543**	**95.7**	4511	96.4	4547	95.6

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

Compiler Invocation Notes

```
Sun Studio compiler patches are available at
http://developers.sun.com/sunstudio/downloads/patches/ss12_patches.jsp
The tested configuration included patch 124867-02, 124861-04, 124863-01

Peak also uses "GCC for SPARC Systems", which combines gcc
with the Sun Code Generator for SPARC systems.  It is invoked
as "gcc", and accepts source code compatible with GCC 4.2.
For more information, including support, see
     http://cooltools.sunsource.net/gcc/
```

Operating System Notes

```
Processes were bound to cores using "submit" and "pbind".
A processor set was created using
  psrset -c 1-63
and the runspec process was placed into the set using
  psrset -e 1

ulimit -s 131072 was used to allow the stack to grow
up to 131072 KB (aka 128 MB).  Note that saying "131072"
is preferable to "unlimited", because there is a tradeoff
between space for the stack vs. space for the heap.

The Sun Blade T6320 is supported by Solaris 10 8/07
plus a factory-installed set of patches.  As tested, the
```

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Operating System Notes (Continued)

```
system used a 15 January 2008 pre-release build of the
patch set.

/etc/system parameters
   autoup = 600
       Causes pages older than the listed number of seconds to
       be written by fsflush.
   tune_t_fsflushr = 10
       Controls how many seconds elapse between runs of the
       page flush daemon, fsflush.

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

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:
```
    -g -fast -xipo=2 -xpagesize=4M -xprefetch=no%auto -xalias_level=std
    -M /usr/lib/ld/map.bssalign
```

C++ benchmarks:
```
    -g0 -library=stlport4 -fast -xipo=2 -xpagesize=4M -xprefetch=no%auto
    -xdepend -xalias_level=compatible -M /usr/lib/ld/map.bssalign
```

Base Other Flags

C benchmarks:
```
    -xjobs=32 -V -#
```

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Software Availability: Feb-2008

Base Other Flags (Continued)

C++ benchmarks:
```
-xjobs=32 -verbose=diags,version
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
cc
```

403.gcc: `gcc`

456.hmmer: `gcc`

462.libquantum: `gcc`

C++ benchmarks (except as noted below):
```
CC
```

471.omnetpp: `g++`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_SOLARIS_SPARC`
462.libquantum: `-DSPEC_CPU_SOLARIS -DSPEC_CPU_NEED_COMPLEX_I`
483.xalancbmk: `-DSPEC_CPU_SOLARIS`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-g -xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M`
`-xprefetch=no%auto -xalias_level=std -xipo=2 -Xc`
`-xrestrict -lfast`

401.bzip2: `-g -xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M`
`-xalias_level=strong`

403.gcc: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M`
`-xprefetch=no%auto -xipo=2 -xalias_level=std`

429.mcf: `basepeak = yes`

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Peak Optimization Flags (Continued)

```
     445.gobmk: -g -xprofile=collect:./feedback(pass 1)
                -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
                -xprefetch=no%auto -xalias_level=std -xrestrict

     456.hmmer: -xprofile=collect:./feedback(pass 1)
                -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
                -xipo=2 -xalias_level=std

     458.sjeng: -g -xprofile=collect:./feedback(pass 1)
                -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
                -xprefetch=no%auto -xipo=2

462.libquantum: -fast -xipo=2

    464.h264ref: -g -xprofile=collect:./feedback(pass 1)
                -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
                -xprefetch=no%auto -xipo=2 -xalias_level=std
```

C++ benchmarks:

```
   471.omnetpp: -xprofile=collect:./feedback(pass 1)
                -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
                -xipo=2 -xalias_level=std

      473.astar: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1)
                -xprofile=use:./feedback(pass 2) -fast -xpagesize_heap=4M
                -xpagesize_stack=64K -xprefetch=no%auto -xdepend
                -xalias_level=compatible -xipo=2 -xarch=v8plusb -lfast
                -lbsdmalloc

  483.xalancbmk: -g0 -library=stlport4 -fast -xpagesize=4M
                -xprefetch=no%auto -xdepend -xalias_level=compatible
                -xipo=2 -lfast
```

Peak Other Flags

C benchmarks (except as noted below):
```
     -xjobs=32 -V -#
```

```
     403.gcc: -v
```

```
   456.hmmer: -v
```

```
462.libquantum: -v
```

C++ benchmarks (except as noted below):
```
     -xjobs=32 -verbose=diags,version
```

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Peak Other Flags (Continued)

471.omnetpp: -v

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090714.xml

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

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