# SPEC® CINT2006 Result

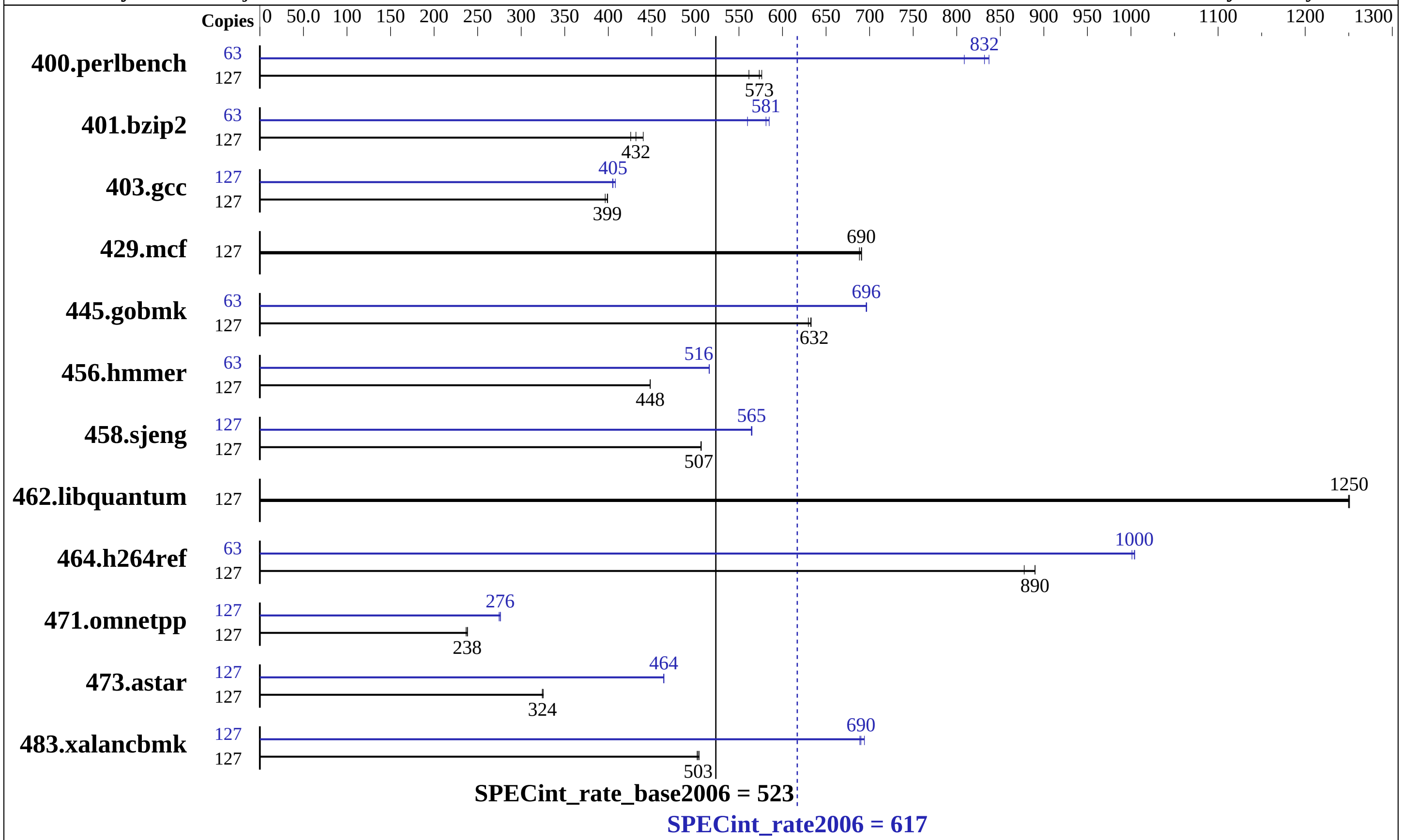


## Sun Microsystems
## Sun SPARC Enterprise M9000

SPECint®_rate2006 = 617

SPECint_rate_base2006 = 523

| | | | |
|---|---|---|---|
| **CPU2006 license:** 6 | | **Test date:** | Apr-2007 |
| **Test sponsor:** | Sun Microsystems | **Hardware Availability:** | Apr-2007 |
| **Tested by:** | Fujitsu Limited | **Software Availability:** | May-2007 |




## Hardware

| | |
|---|---|
| CPU Name: | SPARC64 VI |
| CPU Characteristics: | |
| CPU MHz: | 2280 |
| 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: | 5 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 73 GB, 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 | 2210 | 561 | **2164** | **573** | 2153 | 576 | 63 | 761 | 809 | 735 | 837 | **740** | **832** |
| 401.bzip2 | 127 | 2785 | 440 | 2879 | 426 | **2839** | **432** | 63 | 1086 | 560 | 1040 | 585 | **1046** | **581** |
| 403.gcc | 127 | 2579 | 396 | 2561 | 399 | **2563** | **399** | 127 | 2505 | 408 | **2522** | **405** | 2525 | 405 |
| 429.mcf | 127 | 1683 | 688 | 1676 | 691 | **1677** | **690** | 127 | 1683 | 688 | 1676 | 691 | **1677** | **690** |
| 445.gobmk | 127 | 2116 | 630 | **2107** | **632** | 2105 | 633 | 63 | 949 | 697 | 949 | 696 | **949** | **696** |
| 456.hmmer | 127 | **2643** | **448** | 2645 | 448 | 2643 | 448 | 63 | 1139 | 516 | **1139** | **516** | 1140 | 516 |
| 458.sjeng | 127 | 3036 | 506 | **3033** | **507** | 3033 | 507 | 127 | **2722** | **565** | 2720 | 565 | 2723 | 564 |
| 462.libquantum | 127 | 2106 | 1250 | 2104 | 1250 | **2104** | **1250** | 127 | 2106 | 1250 | 2104 | 1250 | **2104** | **1250** |
| 464.h264ref | 127 | **3159** | **890** | 3158 | 890 | 3203 | 877 | 63 | 1393 | 1000 | 1388 | 1000 | **1389** | **1000** |
| 471.omnetpp | 127 | 3353 | 237 | **3335** | **238** | 3329 | 238 | 127 | **2877** | **276** | 2890 | 275 | 2873 | 276 |
| 473.astar | 127 | 2749 | 324 | 2740 | 325 | **2749** | **324** | 127 | 1922 | 464 | 1923 | 464 | **1923** | **464** |
| 483.xalancbmk | 127 | 1746 | 502 | **1742** | **503** | 1737 | 504 | 127 | **1270** | **690** | 1263 | 694 | 1272 | 689 |

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: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"

 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.
    bufhwm=3000
       Memory byte limit for caching I/O buffers
    segmap_percent=1
```

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## Operating System Notes (Continued)

```
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/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: -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.hmmer: 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



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

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