



SPEC® CINT2006 Result

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Sun Microsystems

SPECint®2006 = 11.3

Sun SPARC Enterprise M8000

SPECint_base2006 = 9.71

CPU2006 license: 6

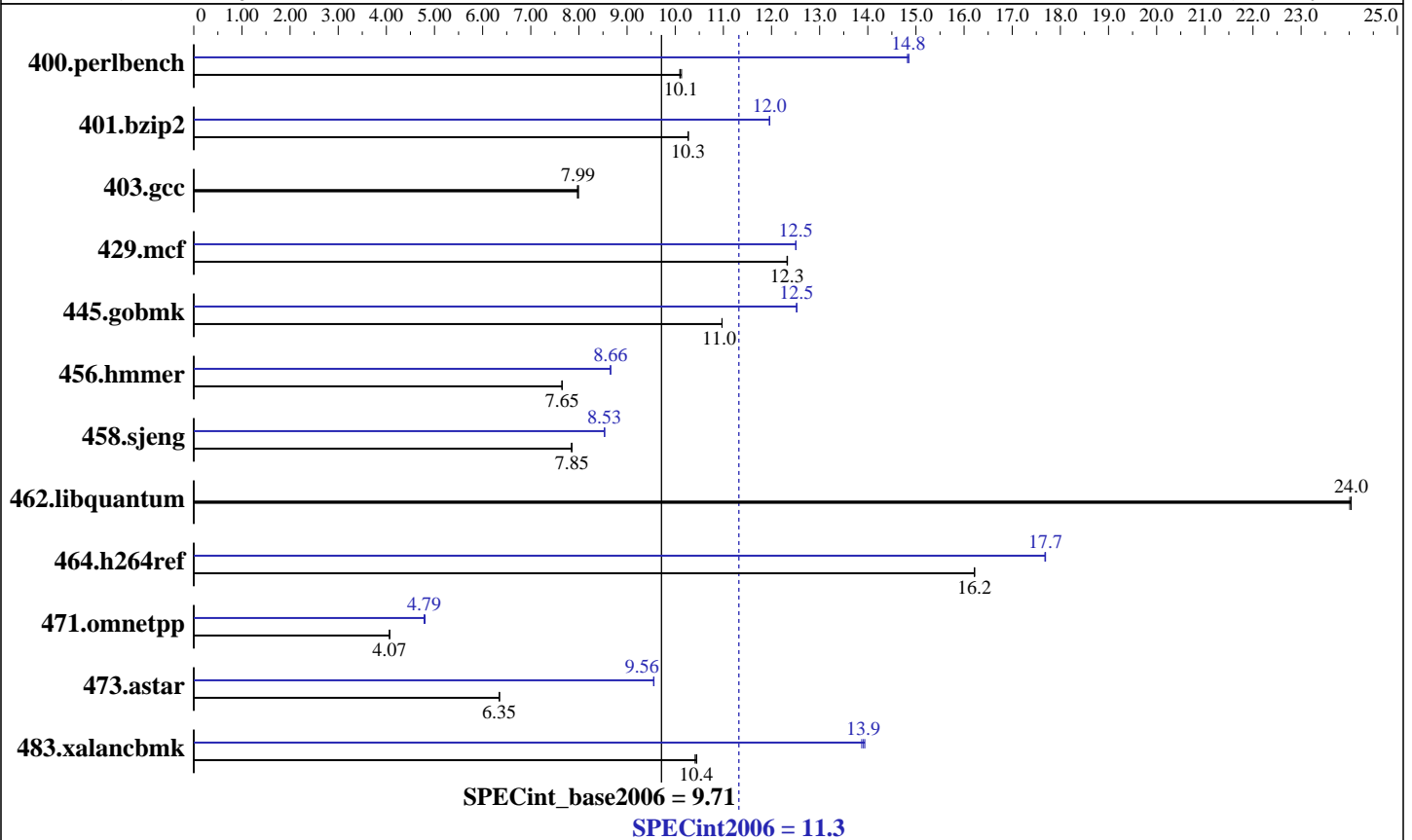
Test date: Mar-2007

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: 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	<u>967</u>	<u>10.1</u>	<u>658</u>	<u>14.8</u>	658	14.9	659	14.8
401.bzip2	940	10.3	940	10.3	<u>940</u>	<u>10.3</u>	807	12.0	807	12.0	<u>807</u>	<u>12.0</u>
403.gcc	<u>1008</u>	<u>7.99</u>	1010	7.97	1008	7.99	<u>1008</u>	<u>7.99</u>	1010	7.97	1008	7.99
429.mcf	740	12.3	<u>740</u>	<u>12.3</u>	740	12.3	<u>729</u>	<u>12.5</u>	<u>729</u>	<u>12.5</u>	730	12.5
445.gobmk	956	11.0	956	11.0	<u>956</u>	<u>11.0</u>	838	12.5	838	12.5	<u>838</u>	<u>12.5</u>
456.hammer	1220	7.65	<u>1220</u>	<u>7.65</u>	1220	7.65	<u>1078</u>	<u>8.66</u>	<u>1078</u>	<u>8.66</u>	<u>1078</u>	<u>8.66</u>
458.sjeng	1542	7.85	<u>1541</u>	<u>7.85</u>	1541	7.85	<u>1418</u>	<u>8.53</u>	1418	8.53	1418	8.53
462.libquantum	863	24.0	<u>862</u>	<u>24.0</u>	862	24.0	<u>863</u>	<u>24.0</u>	<u>862</u>	<u>24.0</u>	862	24.0
464.h264ref	1365	16.2	<u>1365</u>	<u>16.2</u>	1364	16.2	<u>1251</u>	<u>17.7</u>	<u>1251</u>	<u>17.7</u>	1252	17.7
471.omnetpp	1538	4.06	<u>1536</u>	<u>4.07</u>	1536	4.07	<u>1307</u>	<u>4.78</u>	1301	4.80	<u>1306</u>	<u>4.79</u>
473.astar	<u>1106</u>	<u>6.35</u>	1106	6.35	1106	6.35	<u>735</u>	<u>9.55</u>	<u>735</u>	<u>9.56</u>	734	9.56
483.xalancbmk	<u>661</u>	<u>10.4</u>	660	10.4	663	10.4	<u>495</u>	<u>13.9</u>	<u>497</u>	<u>13.9</u>	<u>496</u>	<u>13.9</u>

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



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Peak Compiler Invocation

C benchmarks:

/opt/SUNWspr012_EA070303/bin/cc

C++ benchmarks:

/opt/SUNWspr012_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:l1list=3 -W2,-Apf:noinnerl1list

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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