



# SPEC<sup>®</sup> CINT2006 Result

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## Sun Microsystems Sun Fire V490

SPECint<sup>®</sup>\_rate2006 = 78.0

SPECint\_rate\_base2006 = 71.7

CPU2006 license: 6

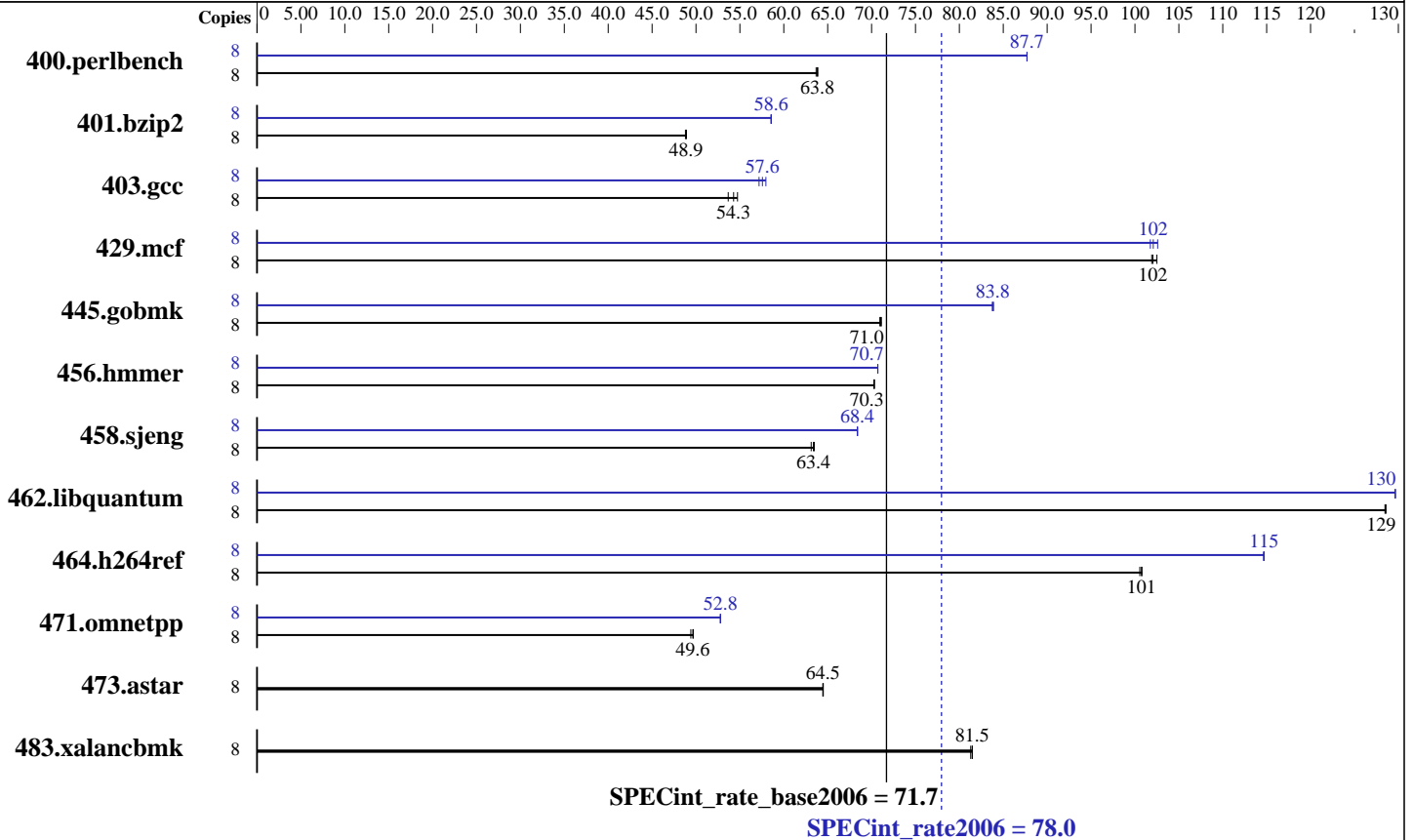
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Feb-2007

Hardware Availability: Apr-2007

Software Availability: May-2007



### Hardware

CPU Name: UltraSPARC IV+  
 CPU Characteristics:  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
 CPU(s) orderable: 2 or 4 chips  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 2 MB I+D on chip per chip  
 L3 Cache: 32 MB I+D off chip per chip  
 Other Cache: None  
 Memory: 32 GB, 8-way interleaved (32 x 1 GB)  
 Disk Subsystem: 1xSCSI 146GB 10k RPM DK32EJ14FSUN146G  
 Other Hardware: None

### Software

Operating System: Solaris 10 6/06  
 Compiler: Sun Studio 12 (pre-release build 40)  
 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	8	1227	63.7	<b><u>1225</u></b>	<b><u>63.8</u></b>	1223	63.9	8	891	87.7	891	87.7	<b><u>891</u></b>	<b><u>87.7</u></b>
401.bzip2	8	<b><u>1580</u></b>	<b><u>48.9</u></b>	1582	48.8	1578	48.9	8	1318	58.6	1318	58.6	<b><u>1318</u></b>	<b><u>58.6</u></b>
403.gcc	8	1177	54.7	<b><u>1186</u></b>	<b><u>54.3</u></b>	1200	53.7	8	1111	58.0	<b><u>1119</u></b>	<b><u>57.6</u></b>	1126	57.2
429.mcf	8	716	102	712	102	<b><u>715</u></b>	<b><u>102</u></b>	8	717	102	<b><u>715</u></b>	<b><u>102</u></b>	711	103
445.gobmk	8	<b><u>1181</u></b>	<b><u>71.0</u></b>	1183	70.9	1180	71.1	8	1002	83.7	1000	83.9	<b><u>1001</u></b>	<b><u>83.8</u></b>
456.hammer	8	1061	70.3	1062	70.3	<b><u>1062</u></b>	<b><u>70.3</u></b>	8	<b><u>1056</u></b>	<b><u>70.7</u></b>	1056	70.7	1056	70.7
458.sjeng	8	<b><u>1528</u></b>	<b><u>63.4</u></b>	1525	63.5	1534	63.1	8	<b><u>1415</u></b>	<b><u>68.4</u></b>	1415	68.4	1416	68.4
462.libquantum	8	1289	129	<b><u>1290</u></b>	<b><u>129</u></b>	1290	128	8	<b><u>1279</u></b>	<b><u>130</u></b>	1278	130	1279	130
464.h264ref	8	<b><u>1757</u></b>	<b><u>101</u></b>	1756	101	1761	101	8	1543	115	<b><u>1543</u></b>	<b><u>115</u></b>	1544	115
471.omnetpp	8	1012	49.4	<b><u>1007</u></b>	<b><u>49.6</u></b>	1006	49.7	8	947	52.8	947	52.8	<b><u>947</u></b>	<b><u>52.8</u></b>
473.astar	8	871	64.5	<b><u>871</u></b>	<b><u>64.5</u></b>	871	64.4	8	871	64.5	<b><u>871</u></b>	<b><u>64.5</u></b>	871	64.4
483.xalancbmk	8	679	81.3	678	81.5	<b><u>678</u></b>	<b><u>81.5</u></b>	8	679	81.3	678	81.5	<b><u>678</u></b>	<b><u>81.5</u></b>

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" was set  
Allows 131072K for the stack, remainder for heap

```
/etc/system parameters
tune_t_fsflushr=1
Controls how many seconds elapse between runs of the
page flush daemon, fsflush.
autoup=900
Causes pages older than the listed number of seconds to
be written by fsflush.
```

## Base Compiler Invocation

C benchmarks:  
cc

C++ benchmarks:  
CC



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## 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\_level=2 -xalias\_level=std

C++ benchmarks:

-g0 -library=stlport4 -xdepend -fast -xipo=2 -xpagesize=4M  
-xprefetch\_level=1 -xalias\_level=compatible -lfast

## Base Other Flags

C benchmarks:

-xjobs=8 -V -#

C++ benchmarks:

-xjobs=8 -verbose=diags,version

## Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

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



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## Peak Optimization Flags

C benchmarks:

```

400.perlbench: -g -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
               -xalias_level=std -Xc -xipo=2 -xrestrict -lfast

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

403.gcc: -g -xprofile=collect:./feedback(pass 1)
          -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
          -xipo=2 -xalias_level=std -xprefetch_level=2

429.mcf: -g -fast -xpagesize=4M -xprefetch_level=2 -xipo=2
         -xrestrict -xalias_level=std -lfast

445.gobmk: -g -xprofile=collect:./feedback(pass 1)
            -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
            -xalias_level=std -xrestrict

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

458.sjeng: -g -xprofile=collect:./feedback(pass 1)
            -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
            -xipo=2

462.libquantum: -g -xprofile=collect:./feedback(pass 1)
                 -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
                 -xprefetch_level=2 -xipo=2

464.h264ref: -g -xprofile=collect:./feedback(pass 1)
              -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
              -xipo=2 -xalias_level=std -l12amm

```

C++ benchmarks:

```

471.omnetpp: -g0 -library=stlport4 -xdepend
              -xprofile=collect:./feedback(pass 1)
              -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
              -xipo=2 -Qoption cg -Qlp-av=0 -lfast

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

```



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## Peak Other Flags

C benchmarks:  
-xjobs=8 -V -#

C++ benchmarks:  
-xjobs=8 -verbose=diags,version

The flags file that was used to format this result can be browsed at  
<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.01.html>

You can also download the XML flags source by saving the following link:  
<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.01.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.0.1.  
Report generated on Tue Jul 22 12:01:08 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 17 April 2007.