



# SPEC<sup>®</sup> CINT2006 Result

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Fujitsu Limited

SPECint<sup>®</sup>\_rate2006 = 637

Fujitsu SPARC Enterprise M8000

SPECint\_rate\_base2006 = 565

CPU2006 license: 19

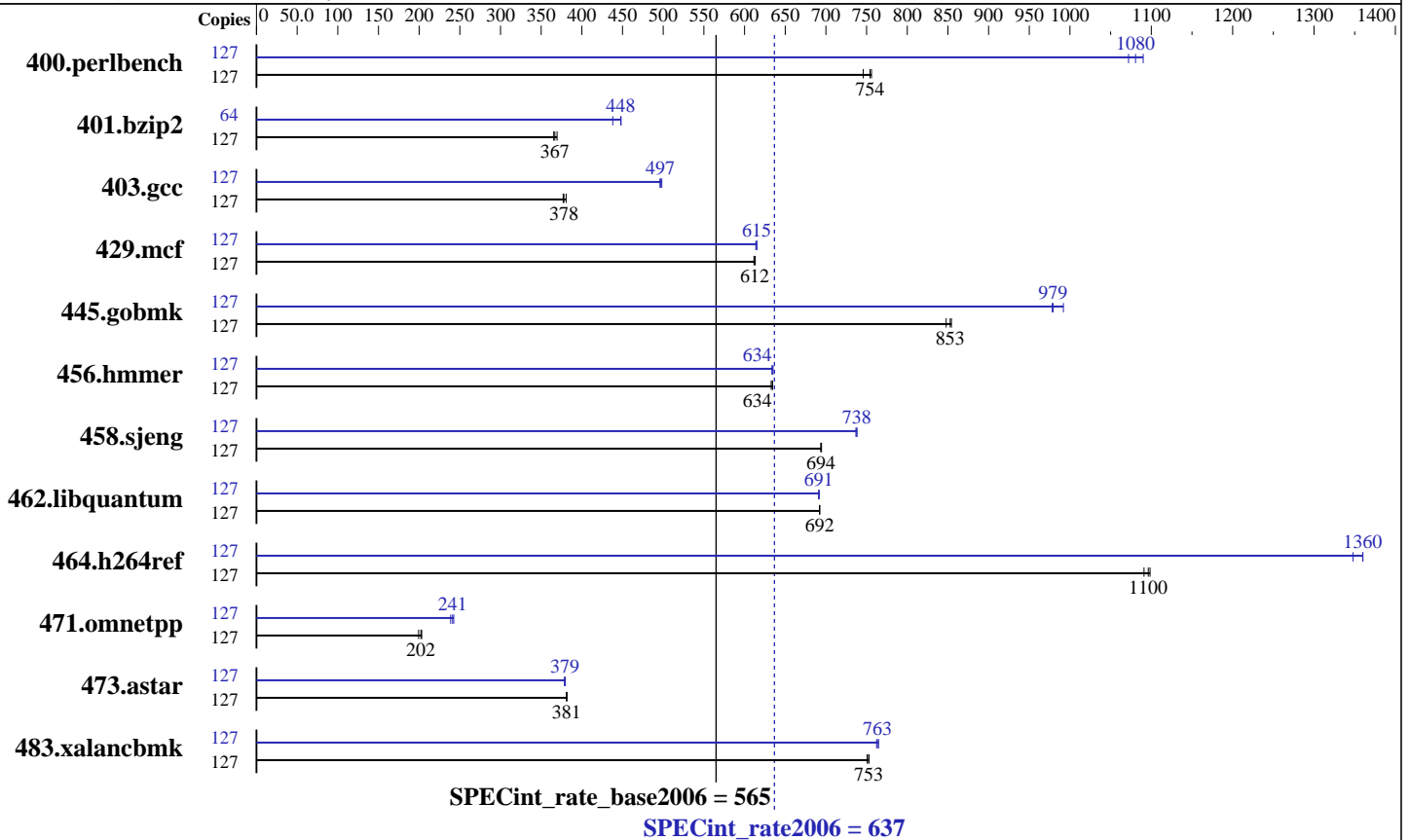
Test date: Jun-2008

Test sponsor: Fujitsu Limited

Hardware Availability: Jul-2008

Tested by: Sun Microsystems

Software Availability: Jul-2008



### Hardware

CPU Name: SPARC64 VII  
 CPU Characteristics: 2520  
 CPU MHz: Integrated  
 FPU: Integrated  
 CPU(s) enabled: 64 cores, 16 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 to 4 CMUs; each CMU contains 2 or 4 chips  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 256 GB (128 x 2 GB)  
 Disk Subsystem: 805 GB RAID 0 Solaris Volume  
 12 x Fujitsu 73 GB 10000 RPM SAS  
 Stripe interlace size 512 Kbytes  
 Other Hardware: None

### Software

Operating System: Solaris 10 5/08 with Patch 137111-03  
 Compiler: Sun Studio 12 with patches  
 124867-06, 124861-07, 124863-05  
 (see patch information 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							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	127	1663	746	<b>1645</b>	<b>754</b>	1641	756	127	1157	1070	<b>1148</b>	<b>1080</b>	1138	1090
401.bzip2	127	3354	365	3316	370	<b>3341</b>	<b>367</b>	64	1410	438	1378	448	<b>1379</b>	<b>448</b>
403.gcc	127	2686	381	<b>2705</b>	<b>378</b>	2712	377	127	2061	496	2052	498	<b>2058</b>	<b>497</b>
429.mcf	127	1889	613	1894	612	<b>1891</b>	<b>612</b>	127	<b>1883</b>	<b>615</b>	1887	614	1883	615
445.gobmk	127	<b>1562</b>	<b>853</b>	1571	848	1559	854	127	1343	992	<b>1360</b>	<b>979</b>	1362	978
456.hammer	127	1873	633	<b>1868</b>	<b>634</b>	1868	634	127	1870	634	1866	635	<b>1869</b>	<b>634</b>
458.sjeng	127	2212	695	<b>2215</b>	<b>694</b>	2215	694	127	2082	738	<b>2083</b>	<b>738</b>	2085	737
462.libquantum	127	3802	692	<b>3801</b>	<b>692</b>	3801	692	127	3804	692	<b>3807</b>	<b>691</b>	3807	691
464.h264ref	127	2559	1100	<b>2564</b>	<b>1100</b>	2576	1090	127	<b>2067</b>	<b>1360</b>	2085	1350	2066	1360
471.omnetpp	127	3983	199	3908	203	<b>3926</b>	<b>202</b>	127	<b>3293</b>	<b>241</b>	3273	242	3326	239
473.astar	127	2340	381	<b>2338</b>	<b>381</b>	2336	382	127	<b>2351</b>	<b>379</b>	2348	380	2355	379
483.xalancbmk	127	1164	753	1167	751	<b>1164</b>	<b>753</b>	127	1146	765	<b>1148</b>	<b>763</b>	1150	762

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](http://developers.sun.com/sunstudio/downloads/patches/ss12_patches.jsp)

## Submit Notes

Processes were assigned to specific processors using 'pbind' commands. The config file option 'submit' was used, along with a list of processors in the 'BIND' variable, to generate the pbind commands. (For details, please see the config file.)

## Operating System Notes

System Tunables (/etc/system parameters):

```
tune_t_fsflushr=10
  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=3
  Set maximum percent memory for file system cache
lpg_alloc_prefer=1
```

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## Operating System Notes (Continued)

Set lgroup page allocation to strongly prefer local pages

Other System Settings:

The webconsole service was turned off using  
svcadm disable webconsole

## Platform Notes

Memory is 8-way interleaved by filling all slots with the same capacity DIMMs.

This result is measured on a Sun SPARC Enterprise M8000 Server. Note that the Sun SPARC Enterprise M8000 and Fujitsu SPARC Enterprise M8000 are electrically equivalent.

## 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:

-fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch\_level=1  
-xalias\_level=std

C++ benchmarks:

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



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## Base Other Flags

C benchmarks:  
-xjobs=16 -V -#

C++ benchmarks:  
-xjobs=16 -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

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -fma=fused  
-xalias\_level=std -xipo=2 -xprefetch\_level=2 -xrestrict  
-lfast

401.bzip2: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=strong -fma=fused

403.gcc: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xipo=2 -xalias\_level=std -xprefetch=no -fma=fused  
-ll2amm

429.mcf: -fast -xpagesize=4M -xipo=2 -xprefetch=no -xrestrict  
-xalias\_level=std -lfast

445.gobmk: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=std -xrestrict -fma=fused

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## Peak Optimization Flags (Continued)

456.hmmr: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xipo=2 -fma=fused

458.sjeng: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xipo=2 -fma=fused -xchip=ultra3cu -xpagesize=4m

462.libquantum: -fast -xpagesize=4M -xipo=2 -xprefetch=latx:3 -fma=fused  
-xpagesize=64K -lbsdmalloc

464.h264ref: -xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xipo=2 -xalias\_level=std -xprefetch=no -ll2amm

C++ benchmarks:

471.omnetpp: -xdepend -library=stlport4  
-xprofile=collect:./feedback(pass 1)  
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M  
-xalias\_level=compatible -xipo=2 -xprefetch\_level=2  
-Qoption cg -Qlp-av=0 -fma=fused -lfast

473.astar: -xdepend -library=stlport4 -fast -xpagesize=4M  
-xalias\_level=compatible -xipo=2 -xprefetch\_level=2  
-fma=fused -lfast

483.xalancbmk: -xdepend -library=stlport4 -fast -xpagesize=4M  
-xalias\_level=compatible -xipo=2 -xprefetch=no -fma=fused  
-lfast

## Peak Other Flags

C benchmarks:

-xjobs=16 -V -#

C++ benchmarks:

-xjobs=16 -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-and-gccfss4.2.20090713.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.xml>



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

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