



SPEC® CINT2006 Result

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Fujitsu SPARC Enterprise M9000

SPECint®_rate2006 = 1720

SPECint_rate_base2006 = 1570

CPU2006 license: 19

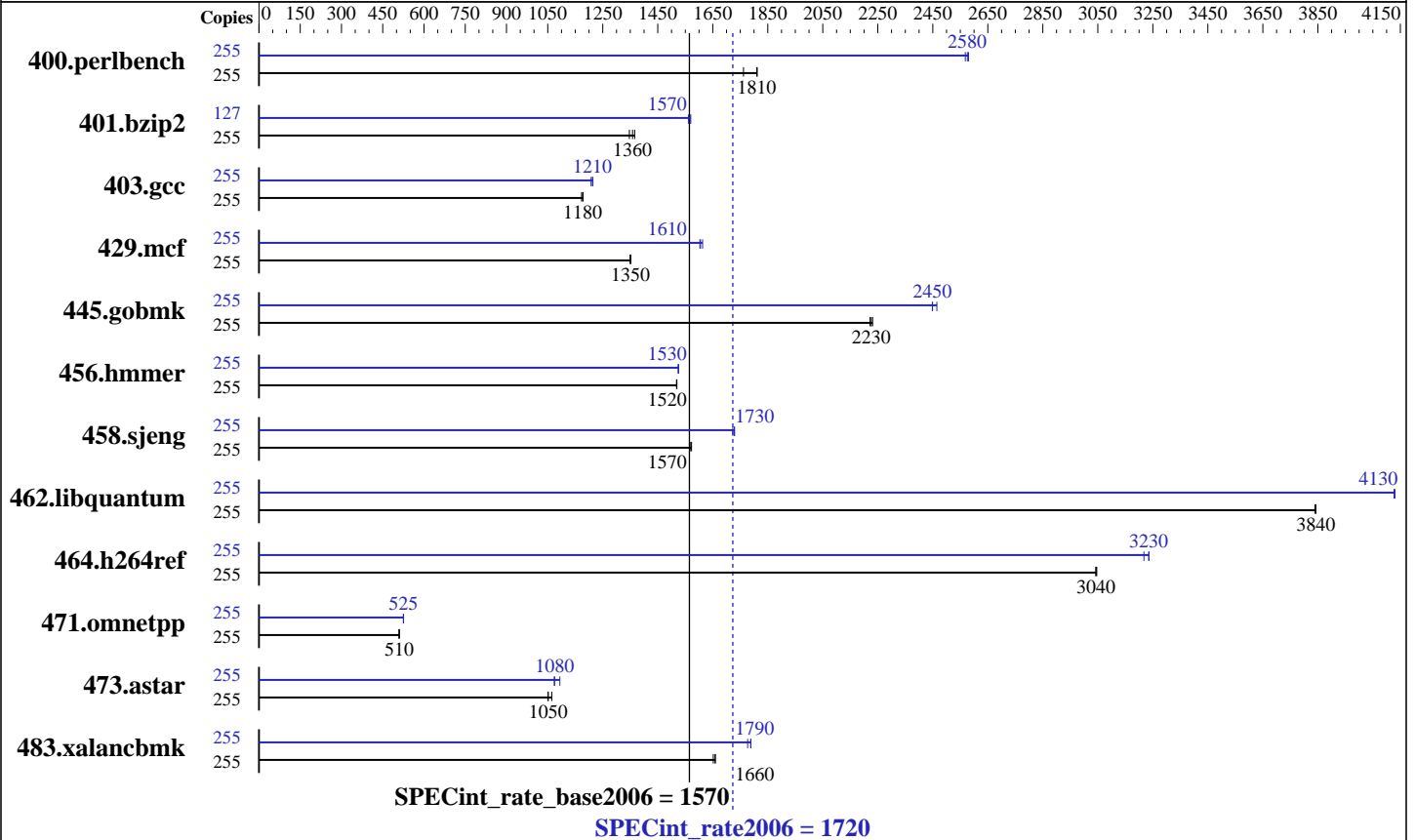
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Sep-2010

Hardware Availability: Dec-2010

Software Availability: Sep-2010



Hardware

CPU Name: SPARC64 VII+
 CPU Characteristics:
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 128 cores, 32 chips, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 to 8 CMUs; each CMU contains 2 or 4 CPU chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 976 GB (32 x 2 GB + 228 x 4 GB, 8-way interleaved)
 Disk Subsystem: 6 x 300 GB 10,000 RPM SAS
 Other Hardware: None

Software

Operating System: Oracle Solaris 10 9/10
 Compiler: Oracle Solaris Studio 12.2
 Auto Parallel: No
 File System: zfs
 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	255	1414	1760	<u>1376</u>	<u>1810</u>	1375	1810	255	966	2580	970	2570	<u>967</u>	<u>2580</u>
401.bzip2	255	1827	1350	<u>1812</u>	<u>1360</u>	1801	1370	127	<u>782</u>	<u>1570</u>	781	1570	785	1560
403.gcc	255	<u>1744</u>	<u>1180</u>	1742	1180	1750	1170	255	1700	1210	1691	1210	<u>1693</u>	<u>1210</u>
429.mcf	255	<u>1721</u>	<u>1350</u>	1723	1350	1720	1350	255	<u>1449</u>	<u>1610</u>	1442	1610	1451	1600
445.gobmk	255	1199	2230	<u>1201</u>	<u>2230</u>	1204	2220	255	<u>1092</u>	<u>2450</u>	1085	2460	1093	2450
456.hammer	255	1567	1520	1566	1520	<u>1567</u>	<u>1520</u>	255	1560	1530	<u>1560</u>	<u>1530</u>	1560	1520
458.sjeng	255	1969	1570	1962	1570	<u>1965</u>	<u>1570</u>	255	1791	1720	1784	1730	<u>1785</u>	<u>1730</u>
462.libquantum	255	1375	3840	<u>1375</u>	<u>3840</u>	1376	3840	255	<u>1280</u>	<u>4130</u>	1280	4130	1279	4130
464.h264ref	255	1855	3040	1853	3050	<u>1854</u>	<u>3040</u>	255	1744	3240	1754	3220	<u>1744</u>	<u>3230</u>
471.omnetpp	255	3123	510	<u>3126</u>	<u>510</u>	3128	509	255	3031	526	<u>3035</u>	<u>525</u>	3035	525
473.astar	255	1681	1060	1703	1050	<u>1702</u>	<u>1050</u>	255	1636	1090	1667	1070	<u>1665</u>	<u>1080</u>
483.xalancbmk	255	1061	1660	<u>1061</u>	<u>1660</u>	1065	1650	255	984	1790	990	1780	<u>984</u>	<u>1790</u>

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

Compiler Invocation Notes

Oracle Solaris Studio 12.2 is distributed with mandatory OS patches
118683-05 119963-20 120753-08
Oracle Solaris Studio 12.2 and patches are available at
<http://oracle.com/goto/solarisstudio>

Submit Notes

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

Operating System Notes

Shell Environments:

ulimit -s 131072 was used to limit the space consumed by the stack.(making more space available for the heap)

System Tunables (/etc/system parameters):

autoup=600

Causes pages older than the listed number of seconds to be written by fsflush.

zfs:zfs_arc_max = 0x10000000

Control the amount of memory used by ZFS for caching

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Operating System Notes (Continued)

lpg_alloc_prefer=1
Prefer local pages, even if not easily available
bufhwm=4000000
Memory byte limit for caching I/O buffers.

Other System Settings:

The webconsole service was turned off using
svcadm disable webconsole

Platform Notes

Memory is 8-way interleaved by filling each CMU's slots with the same capacity DIMMs.

This result is measured on a SPARC Enterprise M9000 server from Fujitsu. The SPARC Enterprise M9000 server from Oracle and from Fujitsu 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 -ll2amm

C++ benchmarks:
-xdepend -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=1 -xalias_level=compatible -ll2amm -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 -xpagesize=4M
-fma=fused -M /usr/lib/ld/map.bssalign -xipo=2
-xalias_level=std -xrestrict -Xc -xprefetch=no%auto -xO4
-lfast
401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xalias_level=strong -xchip=generic
403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xipo=2 -xalias_level=std -xO4 -xchip=generic
-xunroll=7 -ll2amm
429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xipo=2
-xprefetch_auto_type=indirect_array_access -xchip=generic
-xlinkopt -xunroll=7 -W2,-Apf:llist=3

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Peak Optimization Flags (Continued)

429.mcf (continued):

-W2,-Apf:noinnerllist -Wc,-Qlp-prt=1 -Wc,-Qlp-prwt=3
-lfast

445.gobmk: -xprofile=collect:./feedback(pass 1)

-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xalias_level=std -xrestrict -ll2amm -lfast

456.hmmr: -xprofile=collect:./feedback(pass 1)

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

458.sjeng: -xprofile=collect:./feedback(pass 1)

-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xipo=2 -xO4 -xlinkopt -xunroll=2
-xprefetch=no%auto -ll2amm

462.libquantum: -fast -xpagesize=4M -fma=fused -xalias_level=std

-M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch=no%auto
-ll2amm

464.h264ref: -xprofile=collect:./feedback(pass 1)

-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -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
-fma=fused -xalias_level=compatible -xipo=2
-xprefetch_level=2 -Qoption cg -Qlp-av=0
-xprefetch=latx:1.5 -xcache=generic -ll2amm

473.astar: -xdepend -library=stlport4

-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xalias_level=compatible
-M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch=no%auto
-xarch=generic -xunroll=4 -lfast -lbsdmalloc

483.xalancbmk: -xdepend -library=stlport4

-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-fma=fused -xalias_level=compatible -xipo=2
-xprefetch=no%auto -xunroll=8 -lfast



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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/Oracle-Solaris-Studio12.2-SPARC.html>

You can also download the XML flags source by saving the following link:
<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.xml>

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For other inquiries, please contact webmaster@spec.org.

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