



SPEC® CINT2006 Result

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Sun Microsystems Sun Fire E20K

SPECint®_rate2006 = 409

SPECint_rate_base2006 = 376

CPU2006 license: 6

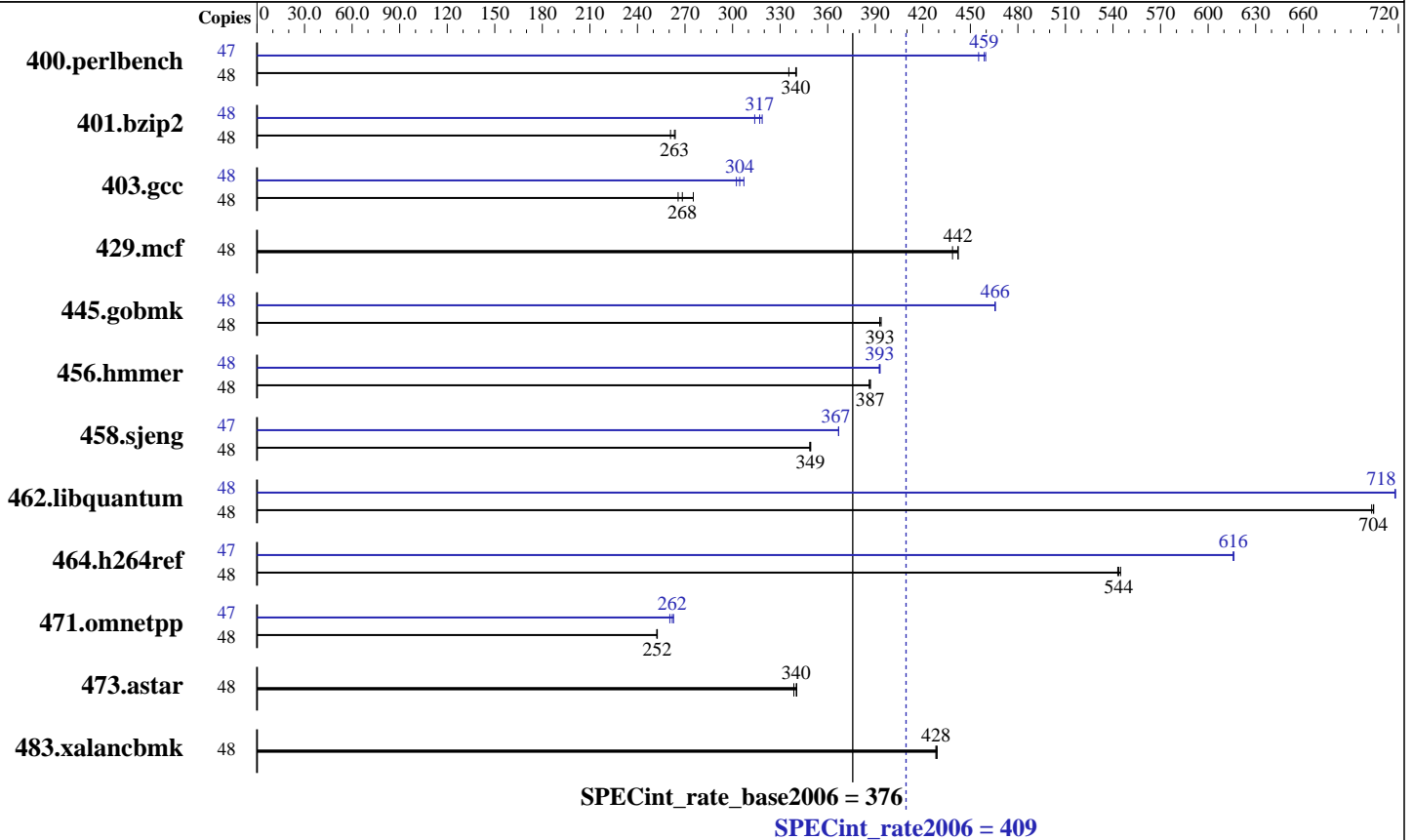
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Mar-2007

Hardware Availability: Apr-2007

Software Availability: May-2007



Hardware

CPU Name: UltraSPARC IV+
 CPU Characteristics: 1950
 CPU MHz: Integrated
 FPU: 48 cores, 24 chips, 2 cores/chip
 CPU(s) enabled: 4-36 (order by number of chips, groups of 4)
 CPU(s) orderable: 64 KB I + 64 KB D on chip per core
 Primary Cache: 2 MB I+D on chip per chip
 Secondary Cache: 32 MB I+D off chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 96 GB, 8-way interleaved (96 x 1GB)
 Disk Subsystem: System: Sun StorageTek D240 Media Tray (2x73GB)
 SPEC: Sun StorageTek 6140
 (5x146GB 10K FC-AL RAID5)
 Other Hardware: None

Software

Operating System: Solaris 10 11/06
 Compiler: Sun Studio 12 (pre-release build 43)
 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	48	1398	335	1380	340	1378	340	47	1009	455	1001	459	999	460
401.bzip2	48	1776	261	1755	264	1759	263	48	1475	314	1461	317	1453	319
403.gcc	48	1455	266	1404	275	1440	268	48	1278	302	1258	307	1269	304
429.mcf	48	990	442	990	442	998	439	48	990	442	990	442	998	439
445.gobmk	48	1279	394	1281	393	1282	393	48	1081	466	1082	466	1081	466
456.hammer	48	1158	387	1157	387	1160	386	48	1139	393	1140	393	1141	393
458.sjeng	48	1663	349	1664	349	1666	349	47	1550	367	1550	367	1550	367
462.libquantum	48	1412	704	1412	704	1414	703	48	1385	718	1386	718	1385	718
464.h264ref	48	1954	544	1956	543	1950	545	47	1689	616	1688	616	1689	616
471.omnetpp	48	1188	253	1189	252	1190	252	47	1128	260	1121	262	1118	263
473.astar	48	990	340	995	339	991	340	48	990	340	995	339	991	340
483.xalancbmk	48	773	428	772	429	773	428	48	773	428	772	429	773	428

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" except for peak runs of 403.gcc, 456.hammer, and 483.xalancbmk.

```
"ulimit -s unlimited"
  Allows stack to grow until system limit.
```

```
/etc/system parameters
```

```
tune_t_fsflushr=3
  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.
bufhwm=3000
  Memory byte limit for caching I/O buffers
segmap_percent=1
  Set maximum percent memory for file system cache
ts_dispatch_extended=0
  Selects default dispatch table, rather than large server table
```



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Base Compiler Invocation

C benchmarks:
/export/ptmp/keeper/build43.0/SUNWspro/bin/cc
C++ benchmarks:
/export/ptmp/keeper/build43.0/SUNWspro/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 -xpagesize=4M -xprefetch_level=2 -xalias_level=std
C++ benchmarks:
-library=stlport4 -xdepend -fast -xipo=2 -xpagesize=4M
-xprefetch_level=1 -xalias_level=compatible -lfast

Base Other Flags

C benchmarks:
-xjobs=24 -V
C++ benchmarks:
-xjobs=24 -verbose=version

Peak Compiler Invocation

C benchmarks:
/export/ptmp/keeper/build43.0/SUNWspro/bin/cc
C++ benchmarks:
/export/ptmp/keeper/build43.0/SUNWspro/bin/CC



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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
-xalias_level=std -Xc -xipo=2 -xrestrict -lfast
401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xalias_level=strong
403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xipo=2 -xalias_level=std -xprefetch_level=2
429.mcf: basepeak = yes
445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xalias_level=std -xrestrict
456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xipo=2 -xalias_level=strong
458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xipo=2
462.libquantum: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xprefetch_level=2 -xipo=2
464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xipo=2 -xalias_level=std -l12amm

C++ benchmarks:

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

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Peak Optimization Flags (Continued)

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:
-xjobs=24 -V
C++ benchmarks:
-xjobs=24 -verbose=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.

Tested with SPEC CPU2006 v1.0.1.
Report generated on Tue Jul 22 12:01:55 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 April 2007.