SPEC® CINT2006 Result

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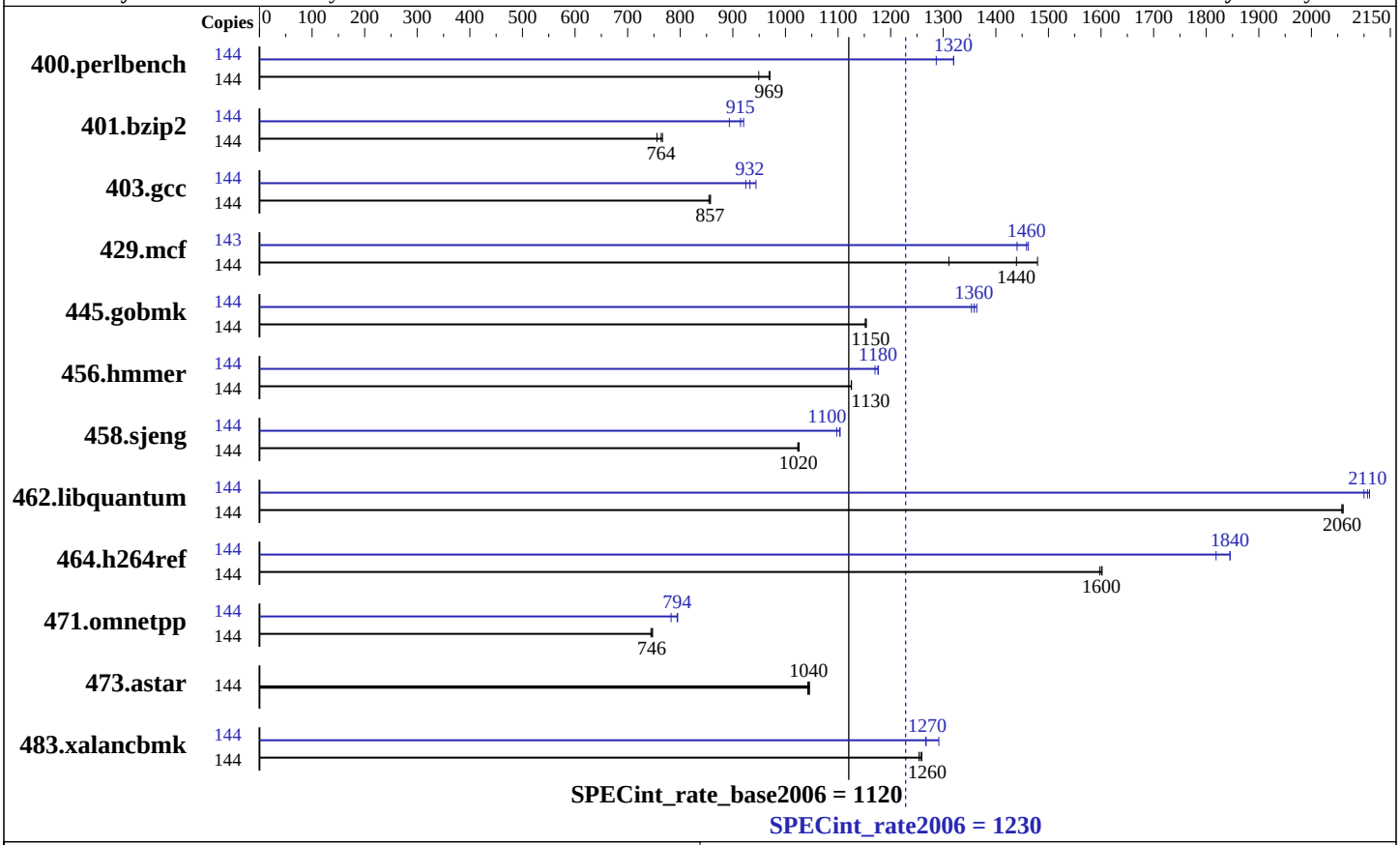
Sun Microsystems
Sun Fire E25K

SPECint®_rate2006 = 1230

SPECint_rate_base2006 = 1120

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:	
CPU MHz:	1950
FPU:	Integrated
CPU(s) enabled:	144 cores, 72 chips, 2 cores/chip
CPU(s) orderable:	4-72 (order by number of chips, groups of 4)
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:	304 GB, 8-way interleaved (272 x 1 GB, 16 x 2 GB)
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	144	1482	949	1450	971	**1452**	**969**	144	1093	1290	**1066**	**1320**	1066	1320
401.bzip2	144	1839	756	1813	766	**1820**	**764**	144	1556	893	**1519**	**915**	1510	921
403.gcc	144	**1353**	**857**	1357	854	1352	858	144	**1243**	**932**	1254	925	1228	944
429.mcf	144	**912**	**1440**	1002	1310	888	1480	143	905	1440	892	1460	**894**	**1460**
445.gobmk	144	**1311**	**1150**	1309	1150	1311	1150	144	**1112**	**1360**	1116	1350	1108	1360
456.hmmer	144	1194	1130	1194	1130	**1194**	**1130**	144	**1143**	**1180**	1142	1180	1148	1170
458.sjeng	144	1698	1030	**1700**	**1020**	1703	1020	144	**1579**	**1100**	1588	1100	1578	1100
462.libquantum	144	**1450**	**2060**	1448	2060	1450	2060	144	**1416**	**2110**	1421	2100	1414	2110
464.h264ref	144	1989	1600	**1991**	**1600**	1995	1600	144	1727	1850	1752	1820	**1727**	**1840**
471.omnetpp	144	1204	747	**1206**	**746**	1209	744	144	**1133**	**794**	1150	783	1132	795
473.astar	144	**968**	**1040**	970	1040	967	1050	144	**968**	**1040**	970	1040	967	1050
483.xalancbmk	144	792	1250	789	1260	**790**	**1260**	144	784	1270	769	1290	**784**	**1270**

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.hmmer, 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=1200
      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
```

Platform Notes

```
The tested system had 18 system boards.  The first 17
system boards were equipped with 16GB of memory; the last
```

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Platform Notes (Continued)

```
system board had 32GB.  All memory was 8-way interleaved.
```

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
```

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: -fast -xpagesize=4M -xprefetch_level=2 -xipo=2 -xrestrict
-xalias_level=std -lfast

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 -ll2amm

C++ benchmarks:

471.omnetpp: -library=stlport4 -xdepend
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M

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Peak Optimization Flags (Continued)

471.omnetpp (continued):
-xipo=2 -Qoption cg -Qlp-av=0 -lfast

473.astar: basepeak = yes

483.xalancbmk: -library=stlport4 -xdepend -fast -xpagesize=4M
-xprefetch_level=1 -xipo=2 -xalias_level=compatible -lfast

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.

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