SPEC® CINT2006 Result

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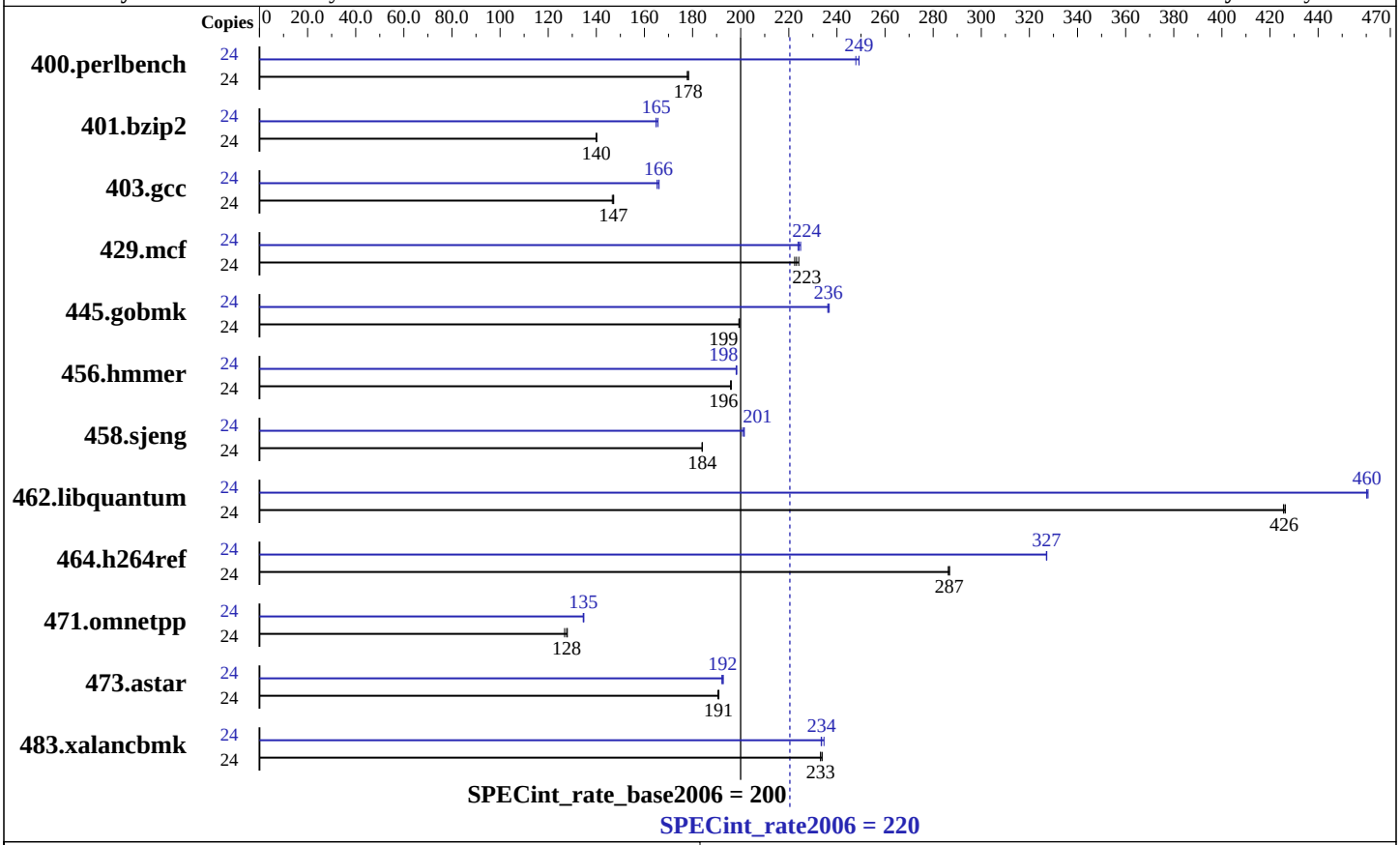
Sun Microsystems
Sun Fire E4900

SPECint®_rate2006 = 220

SPECint_rate_base2006 = 200

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:	24 cores, 12 chips, 2 cores/chip
CPU(s) orderable:	4, 8, 12
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:	48 GB, 8-way interleaved (48 x 1 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	24	1319	178	**1316**	**178**	1315	178	24	946	248	**941**	**249**	941	249
401.bzip2	24	**1653**	**140**	1653	140	1655	140	24	1405	165	**1405**	**165**	1398	166
403.gcc	24	1312	147	**1314**	**147**	1318	147	24	1163	166	1169	165	**1165**	**166**
429.mcf	24	976	224	**981**	**223**	984	222	24	973	225	**976**	**224**	978	224
445.gobmk	24	**1262**	**199**	1264	199	1262	200	24	1063	237	**1065**	**236**	1066	236
456.hmmer	24	1142	196	**1143**	**196**	1143	196	24	1129	198	1130	198	**1130**	**198**
458.sjeng	24	1579	184	**1578**	**184**	1578	184	24	**1442**	**201**	1441	201	1446	201
462.libquantum	24	1168	426	**1168**	**426**	1166	426	24	**1080**	**460**	1079	461	1081	460
464.h264ref	24	1855	286	**1852**	**287**	1852	287	24	1624	327	**1623**	**327**	1623	327
471.omnetpp	24	1183	127	1172	128	**1175**	**128**	24	**1114**	**135**	1115	135	1113	135
473.astar	24	882	191	884	191	**883**	**191**	24	**875**	**192**	874	193	877	192
483.xalancbmk	24	710	233	708	234	**710**	**233**	24	**709**	**234**	709	233	706	235

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.xa

"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.
```

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
-xipo=2 -Qoption cg -Qlp-av=0 -lfast

473.astar: -library=stlport4 -xdepend -fast -xpagesize=4M -xipo=2
-xprefetch_level=2
-xprefetch_auto_type=indirect_array_access
-xalias_level=compatible -xrestrict -lfast

Continued on next page

Peak Optimization Flags (Continued)

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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