



SPEC® CINT2006 Result

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Sun Microsystems Sun Fire E4900

SPECint®_rate2006 = 220

SPECint_rate_base2006 = 200

CPU2006 license: 6

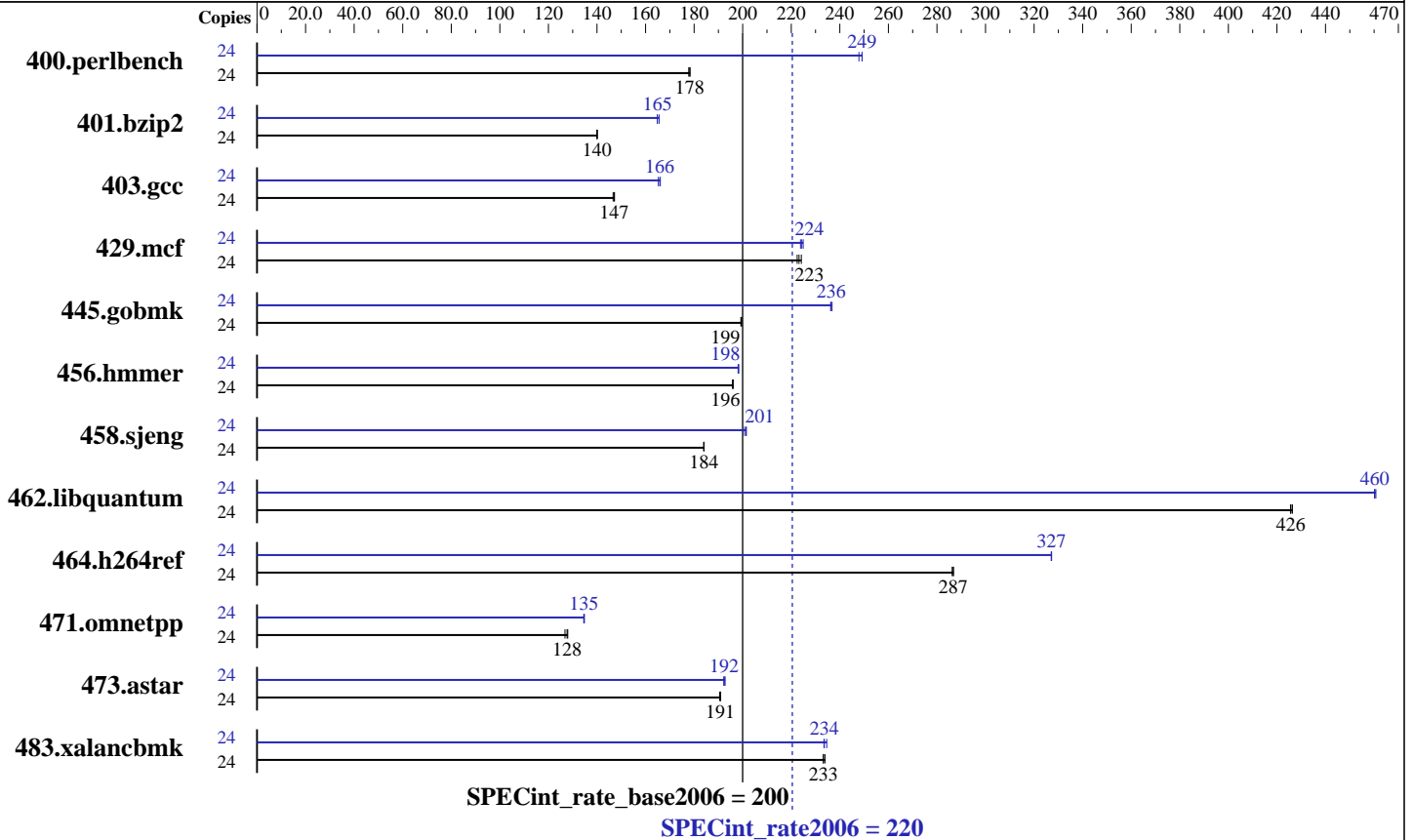
Test sponsor: Sun Microsystems

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	<u>1316</u>	<u>178</u>	1315	178	24	946	248	<u>941</u>	<u>249</u>	941	249
401.bzip2	24	<u>1653</u>	<u>140</u>	1653	140	1655	140	24	1405	165	<u>1405</u>	<u>165</u>	1398	166
403.gcc	24	1312	147	<u>1314</u>	<u>147</u>	1318	147	24	1163	166	1169	165	<u>1165</u>	<u>166</u>
429.mcf	24	976	224	<u>981</u>	<u>223</u>	984	222	24	973	225	<u>976</u>	<u>224</u>	978	224
445.gobmk	24	<u>1262</u>	<u>199</u>	1264	199	1262	200	24	1063	237	<u>1065</u>	<u>236</u>	1066	236
456.hmmmer	24	1142	196	<u>1143</u>	<u>196</u>	1143	196	24	1129	198	1130	198	<u>1130</u>	<u>198</u>
458.sjeng	24	1579	184	<u>1578</u>	<u>184</u>	1578	184	24	<u>1442</u>	<u>201</u>	1441	201	1446	201
462.libquantum	24	1168	426	<u>1168</u>	<u>426</u>	1166	426	24	<u>1080</u>	<u>460</u>	1079	461	1081	460
464.h264ref	24	1855	286	<u>1852</u>	<u>287</u>	1852	287	24	1624	327	<u>1623</u>	<u>327</u>	1623	327
471.omnetpp	24	1183	127	1172	128	<u>1175</u>	<u>128</u>	24	<u>1114</u>	<u>135</u>	1115	135	1113	135
473.astar	24	882	191	884	191	<u>883</u>	<u>191</u>	24	<u>875</u>	<u>192</u>	874	193	877	192
483.xalancbmk	24	710	233	708	234	<u>710</u>	<u>233</u>	24	<u>709</u>	<u>234</u>	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.hmmmer, 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



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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



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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 -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

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

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

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