SPEC® CINT2006 Result

Oracle Corporation
SPARC Enterprise M4000

SPECint®2006 = 14.8

SPECint_base2006 = 13.4

CPU2006 license: 6
Test sponsor: Oracle Corporation
Tested by: Fujitsu

Test date: Oct-2010
Hardware Availability: Dec-2010
Software Availability: Sep-2010

Benchmark	Peak	Base
400.perlbench	15.5	11.2
401.bzip2	12.3	10.7
403.gcc	10.5	10.1
429.mcf	20.6	17.1
445.gobmk	13.7	12.3
456.hmmer	9.88	9.84
458.sjeng	9.33	8.56
462.libquantum	66.2	63.9
464.h264ref	21.4	20.1
471.omnetpp	8.06	7.17
473.astar	11.5	10.8
483.xalancbmk	16.6	15.9

SPECint_base2006 = 13.4
SPECint2006 = 14.8

Hardware

CPU Name:	SPARC64 VII+
CPU Characteristics:	
CPU MHz:	2660
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 2 CPUMs; each CPUM contains 2 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	11 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	128 GB (32 x 4 GB, 8-way interleaved)
Disk Subsystem:	1 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:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

SPEC CINT2006 Result
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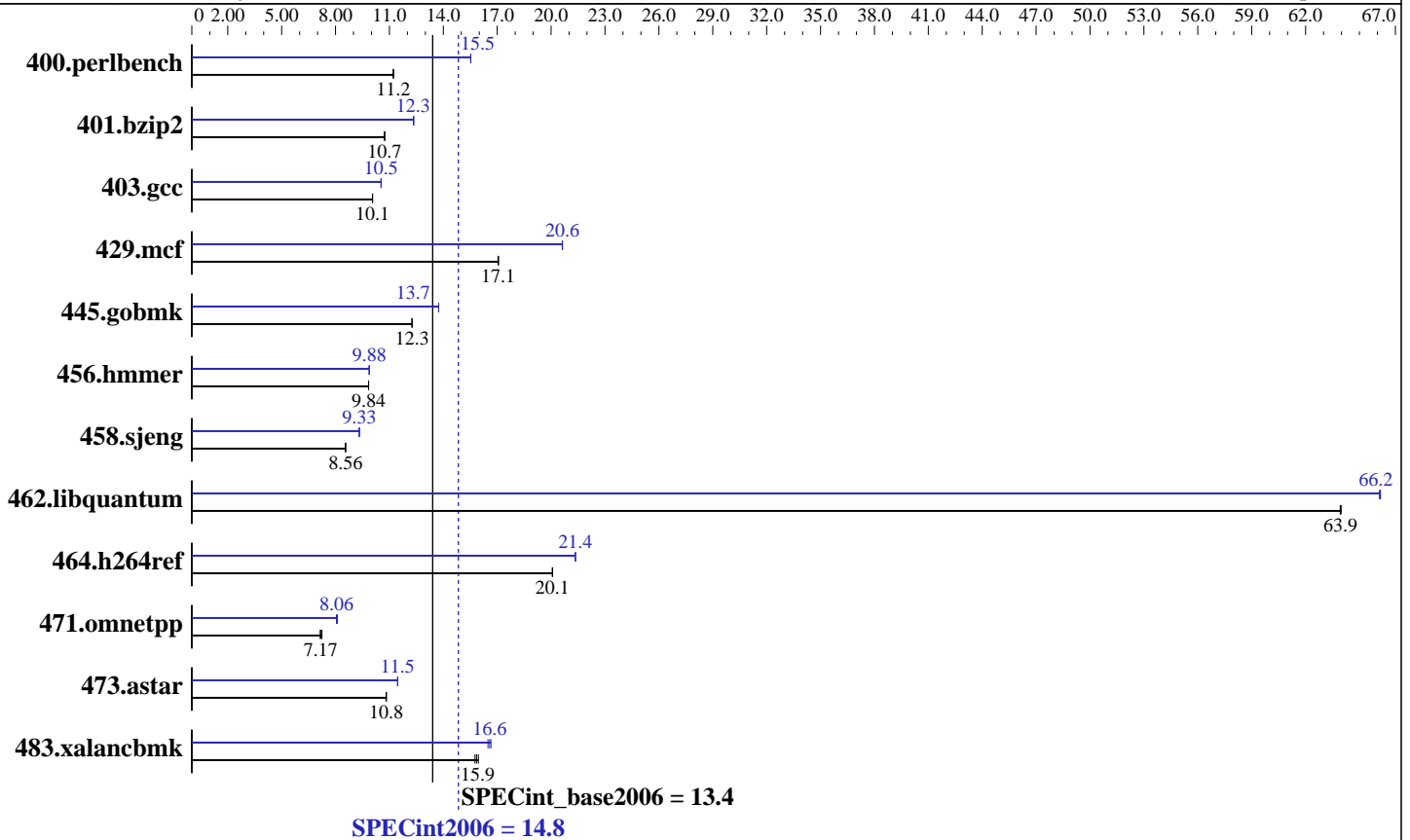
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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	871	11.2	**871**	**11.2**	870	11.2	**629**	**15.5**	629	15.5	629	15.5
401.bzip2	**899**	**10.7**	899	10.7	899	10.7	781	12.4	**782**	**12.3**	782	12.3
403.gcc	**800**	**10.1**	800	10.1	800	10.1	**764**	**10.5**	765	10.5	764	10.5
429.mcf	534	17.1	**534**	**17.1**	535	17.1	**442**	**20.6**	442	20.6	442	20.6
445.gobmk	**856**	**12.3**	856	12.3	856	12.3	763	13.7	**763**	**13.7**	763	13.7
456.hmmer	**948**	**9.84**	948	9.84	948	9.84	945	9.88	**945**	**9.88**	945	9.88
458.sjeng	1415	8.55	**1414**	**8.56**	1413	8.56	**1297**	**9.33**	1298	9.32	1297	9.33
462.libquantum	324	64.0	324	63.9	**324**	**63.9**	313	66.1	313	66.2	**313**	**66.2**
464.h264ref	**1102**	**20.1**	1102	20.1	1103	20.1	**1036**	**21.4**	1036	21.4	1036	21.4
471.omnetpp	874	7.15	863	7.24	**871**	**7.17**	**775**	**8.06**	776	8.05	771	8.10
473.astar	**649**	**10.8**	649	10.8	648	10.8	613	11.5	613	11.5	**613**	**11.5**
483.xalancbmk	**435**	**15.9**	438	15.8	433	16.0	**416**	**16.6**	414	16.7	419	16.5

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

```
    Processes were assigned to specific processors using 'pbind'
    commands.  The config file option 'submit' was used, along
    with a list of processors 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)

        tune_t_fsflushr=10
            Controls how many seconds elapse between runs of the
```
Continued on next page

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Operating System Notes (Continued)

```
      page flush daemon, fsflush.
   autoup=600
      Causes pages older than the listed number of seconds to
      be written by fsflush.

Other System Settings:

      The webconsole service was turned off using svcadm disable webconsole.
```

Platform Notes

```
 Memory is 8-way interleaved by filling all slots with
 the same capacity DIMMs.

 This result is measured on a SPARC Enterprise M4000 server from
 Fujitsu.  The SPARC Enterprise M4000 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=2
    -xalias_level=std -M /usr/lib/ld/map.bssalign -ll2amm
```

C++ benchmarks:
```
    -xdepend -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M
    -xprefetch_level=2 -xalias_level=compatible -M /usr/lib/ld/map.bssalign
    -lfast
```

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Base Other Flags

C benchmarks:
```
-xjobs=2 -V -#
```

C++ benchmarks:
```
-xjobs=2 -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 -fma=fused
               -xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2
               -xalias_level=std -xrestrict -Xc -xprefetch=no%auto
               -xarch=generic -lfast

    401.bzip2: -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast -fma=fused
               -xpagesize=4M -xalias_level=strong -xchip=generic

     403.gcc: -xprofile=tcov:./feedback(pass 1)
              -xprofile=use:./feedback(pass 2) -fast -fma=fused
              -xpagesize=4M -xipo=2 -xalias_level=std -xO4
              -xchip=generic -xunroll=7 -ll2amm

     429.mcf: -fast -fma=fused -xpagesize=4M -xipo=2
              -xprefetch=latx:0.5 -xprefetch_level=3
              -xprefetch_auto_type=indirect_array_access -xchip=generic
              -xlinkopt -xunroll=7 -W2,-Apf:llist=3
              -W2,-Apf:noinnerllist -Wc,-Qlp-prt=1 -Wc,-Qlp-prwt=3
```

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Peak Optimization Flags (Continued)

429.mcf (continued):
```
-lfast
```

445.gobmk: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -fma=fused`
`-xpagesize=4M -xalias_level=std -xrestrict`
`-xprefetch=latx:0.5 -ll2amm`

456.hmmer: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -fma=fused`
`-xpagesize=4M -xipo=2`

458.sjeng: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -fma=fused`
`-xpagesize=4M -xipo=2 -xO4 -xlinkopt -xunroll=2 -ll2amm`

462.libquantum: `-fast -fma=fused -xpagesize=4M -xalias_level=std -xipo=2`
`-xprefetch=no%auto -xO4 -xarch=generic -xcache=generic`
`-xlinkopt=2 -xunroll=8`

464.h264ref: `-xprofile=tcov:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -fma=fused`
`-xpagesize=4M -xipo=2 -xalias_level=std -xlinkopt=2`
`-ll2amm`

C++ benchmarks:

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

473.astar: `-xdepend -library=stlport4`
`-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -fma=fused`
`-xpagesize=4M -xalias_level=compatible`
`-M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch=no%auto`
`-xarch=v8plusb -lfast -lbsdmalloc`

483.xalancbmk: `-xdepend -library=stlport4`
`-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -fma=fused`
`-xpagesize=4M -xalias_level=compatible -xipo=2`
`-xprefetch=no -lfast`

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Peak Other Flags

C benchmarks:
```
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```

C++ benchmarks:
```
-xjobs=2 -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.20101221.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.20101221.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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