SPEC® CINT2006 Result
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Sun Microsystems

Sun Blade X6275 (Intel Xeon X5570 2.93GHz)

$SPECint^{®}2006 =$ 37.4
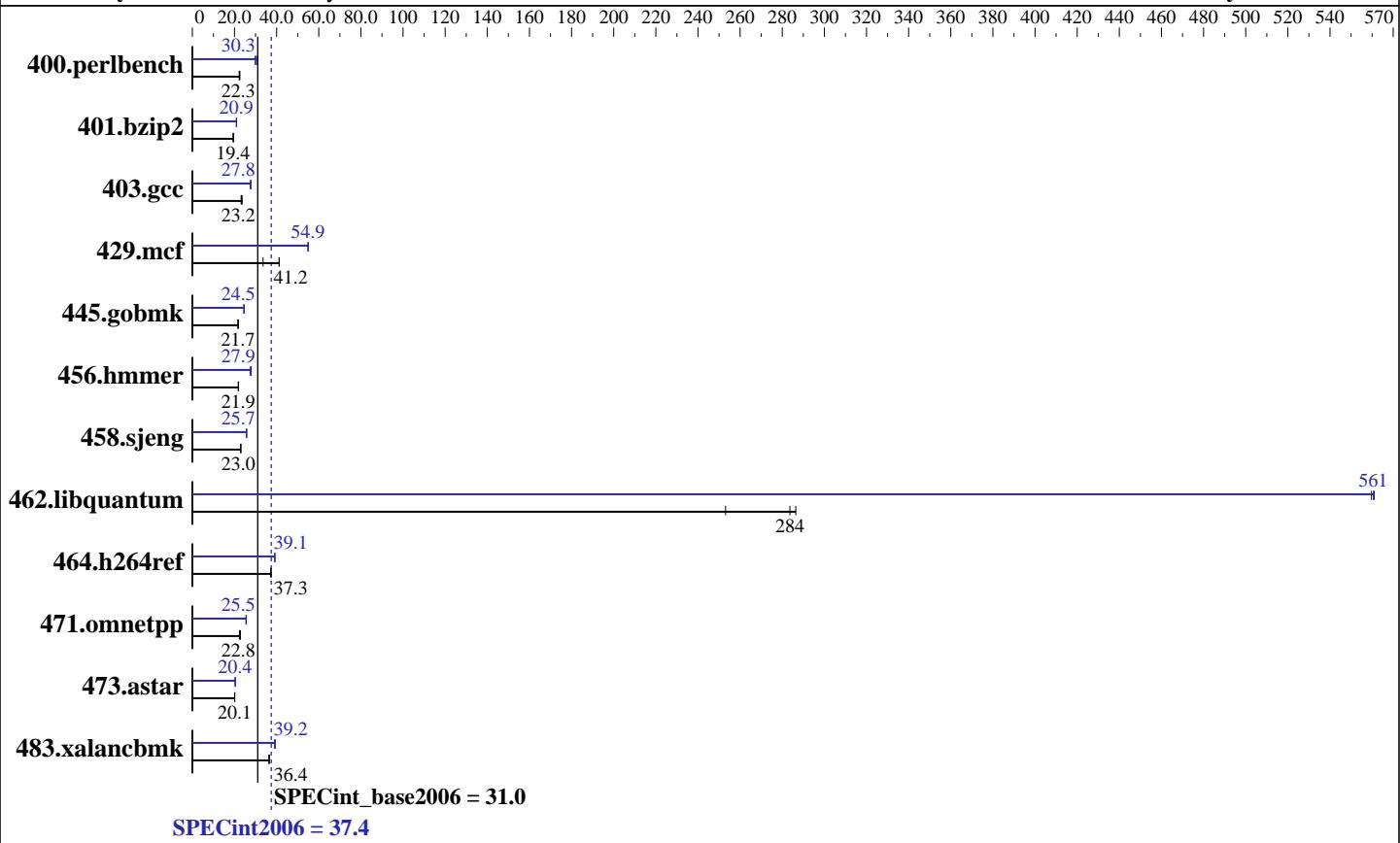
$SPECint\_base2006 =$ 31.0

CPU2006 license: 6
Test sponsor: Sun Microsystems
Tested by: Sun Microsystems

Test date: Jun-2009
Hardware Availability: Apr-2009
Software Availability: Jun-2009

400.perlbench 30.3 / 22.3
401.bzip2 20.9 / 19.4
403.gcc 27.8 / 23.2
429.mcf 54.9 / 41.2
445.gobmk 24.5 / 21.7
456.hmmer 27.9 / 21.9
458.sjeng 25.7 / 23.0
462.libquantum 561 / 284
464.h264ref 39.1 / 37.3
471.omnetpp 25.5 / 22.8
473.astar 20.4 / 20.1
483.xalancbmk 39.2 / 36.4

SPECint_base2006 = 31.0

SPECint2006 = 37.4

Hardware

CPU Name:	Intel Xeon X5570
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1 or 2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (6 x 4 GB DDR3-1333)
Disk Subsystem:	1 x 24 GB, SAS, Sun FlashDisk
Other Hardware:	None

Software

Operating System:	OpenSolaris 2009.06
Compiler:	Sun Studio 12 Update 1
Auto Parallel:	Yes
File System:	zfs
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 9.01 for x64
	Apache C++ Standard Library V4.2.1

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	439	22.3	433	22.6	**438**	**22.3**	319	30.6	**322**	**30.3**	328	29.8
401.bzip2	**496**	**19.4**	497	19.4	496	19.4	**461**	**20.9**	460	21.0	462	20.9
403.gcc	**347**	**23.2**	347	23.2	341	23.6	293	27.5	290	27.8	**290**	**27.8**
429.mcf	221	41.2	272	33.6	**222**	**41.2**	**166**	**54.9**	166	55.0	166	54.9
445.gobmk	483	21.7	**483**	**21.7**	484	21.7	428	24.5	428	24.5	**428**	**24.5**
456.hmmer	**427**	**21.9**	427	21.8	427	21.9	341	27.4	334	27.9	**335**	**27.9**
458.sjeng	527	23.0	527	23.0	**527**	**23.0**	471	25.7	470	25.7	**470**	**25.7**
462.libquantum	**73.1**	**284**	81.9	253	72.3	286	**37.0**	**561**	37.0	560	36.9	561
464.h264ref	**593**	**37.3**	593	37.3	593	37.3	566	39.1	565	39.1	**565**	**39.1**
471.omnetpp	274	22.8	**274**	**22.8**	280	22.3	245	25.5	244	25.6	**245**	**25.5**
473.astar	**349**	**20.1**	350	20.1	349	20.1	346	20.3	**345**	**20.4**	345	20.4
483.xalancbmk	189	36.5	189	36.4	**189**	**36.4**	175	39.4	177	39.0	**176**	**39.2**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Invocation Notes

```
The Apache C++ Standard Library V4.2.1 was installed from
http://stdcxx.apache.org/download.html using:
    alias gmake=specmake
    gmake BUILDTYPE=8D CONFIG=sunpro.config
```

Operating System Notes

```
ulimit -s 131072  (shell): increases stack

/etc/system parameters
   tune_t_fsflushr=10
   autoup=900
```

Platform Notes

```
AMIBIOS Build Date 1/26/09 ID 07.01.36.00
  Default BIOS settings used except:
  Intel VT-d: Disabled.  VT-d, if enabled, supports
  remapping of I/O DMA transfers for virtualization.
  Hyper-Threading Technology : Disabled.  If enabled,
  allows 2 hw threads to execute per core.
```

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General Notes

```
Environment variables set by runspec before the start of the run:
OMP_NUM_THREADS = "4"
SUNW_MP_PROCBIND = "true"
SUNW_MP_THR_IDLE = "SPIN"
```

Base Compiler Invocation

C benchmarks:
    cc

C++ benchmarks:
    CC

Base Portability Flags

```
    400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS_X64
       401.bzip2: -DSPEC_CPU_LP64
         403.gcc: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
         429.mcf: -DSPEC_CPU_LP64
       445.gobmk: -DSPEC_CPU_LP64
       456.hmmer: -DSPEC_CPU_LP64
       458.sjeng: -DSPEC_CPU_LP64
    462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
      464.h264ref: -DSPEC_CPU_LP64
      471.omnetpp: -DSPEC_CPU_LP64
        473.astar: -DSPEC_CPU_LP64
    483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
```

Base Optimization Flags

C benchmarks:
```
    -fast -xipo=2 -m64 -xpagesize=2M -xprefetch -xalias_level=std
    -xautopar
```

C++ benchmarks:
```
    -fast -xipo=2 -m64 -xpagesize=2M -xvector=simd -xprefetch=no%auto
    -xalias_level=compatible
    -L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap64
    -library=stlport4
```

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Base Other Flags

C benchmarks:
```
-V -# -xjobs=8
```

C++ benchmarks:
```
-verbose=diags,version -xjobs=8
```

Peak Compiler Invocation

C benchmarks:
```
cc
```

C++ benchmarks:
```
CC
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_SOLARIS_IA32
      403.gcc: -DSPEC_CPU_LP64 -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 -xipo=2
               -xpagesize=2M -xvector=simd -xalias_level=std
               -xprefetch=no%auto -lbsdmalloc -lumem

    401.bzip2: -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast -xipo=2
               -xaddr32=yes -m64 -xpagesize=2M -xalias_level=strong
               -xprefetch=no%auto -lumem

      403.gcc: -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast -xipo=2
               -xpagesize=2M -xalias_level=std -xaddr32=yes -m64
               -xprefetch=no%auto

      429.mcf: -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast -xipo=2
               -xalias_level=strict -xprefetch=no%auto -lbsdmalloc
```

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Peak Optimization Flags (Continued)

445.gobmk: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xaddr32=yes -m64`
`-xpagesize=2M -xrestrict -xalias_level=strong -xdepend`
`-xautopar -lmvec`

456.hmmer: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xipo=2`
`-xaddr32=yes -m64`

458.sjeng: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xipo=2`
`-xaddr32=yes -m64 -xpagesize=2M -xvector=simd -xrestrict`
`-xalias_level=std -xprefetch=no%auto`

462.libquantum: `-fast -xipo=2 -m64 -xpagesize=2M`
`-W2,-Aparallel:nthreads=8 -xautopar -xreduction`

464.h264ref: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xipo=2`
`-xaddr32=yes -m64 -xpagesize=2M -xalias_level=strong`
`-xautopar`

C++ benchmarks:

471.omnetpp: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xipo=2`
`-xpagesize=2M`
`-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap`
`-library=stlport4`

473.astar: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xipo=2`
`-xaddr32=yes -m64 -xpagesize=2M`
`-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap_mt64`
`-xalias_level=compatible -library=stlport4 -xautopar`

483.xalancbmk: `-xprofile=collect:./feedback(pass 1)`
`-xprofile=use:./feedback(pass 2) -fast -xipo=2`
`-xaddr32=yes -m64 -xpagesize=2M -xunroll=12`
`-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap64`
`-library=stlport4`

Peak Other Flags

C benchmarks:
`-V -# -xjobs=8`

Continued on next page

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Peak Other Flags (Continued)

C++ benchmarks:
```
-verbose=diags,version -xjobs=8
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.xml

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