SPEC® CINT2006 Result
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Oracle Corporation

Sun Server X2-4 (Intel Xeon E7-4820 2.0 GHz)

SPECint®2006 = 30.9

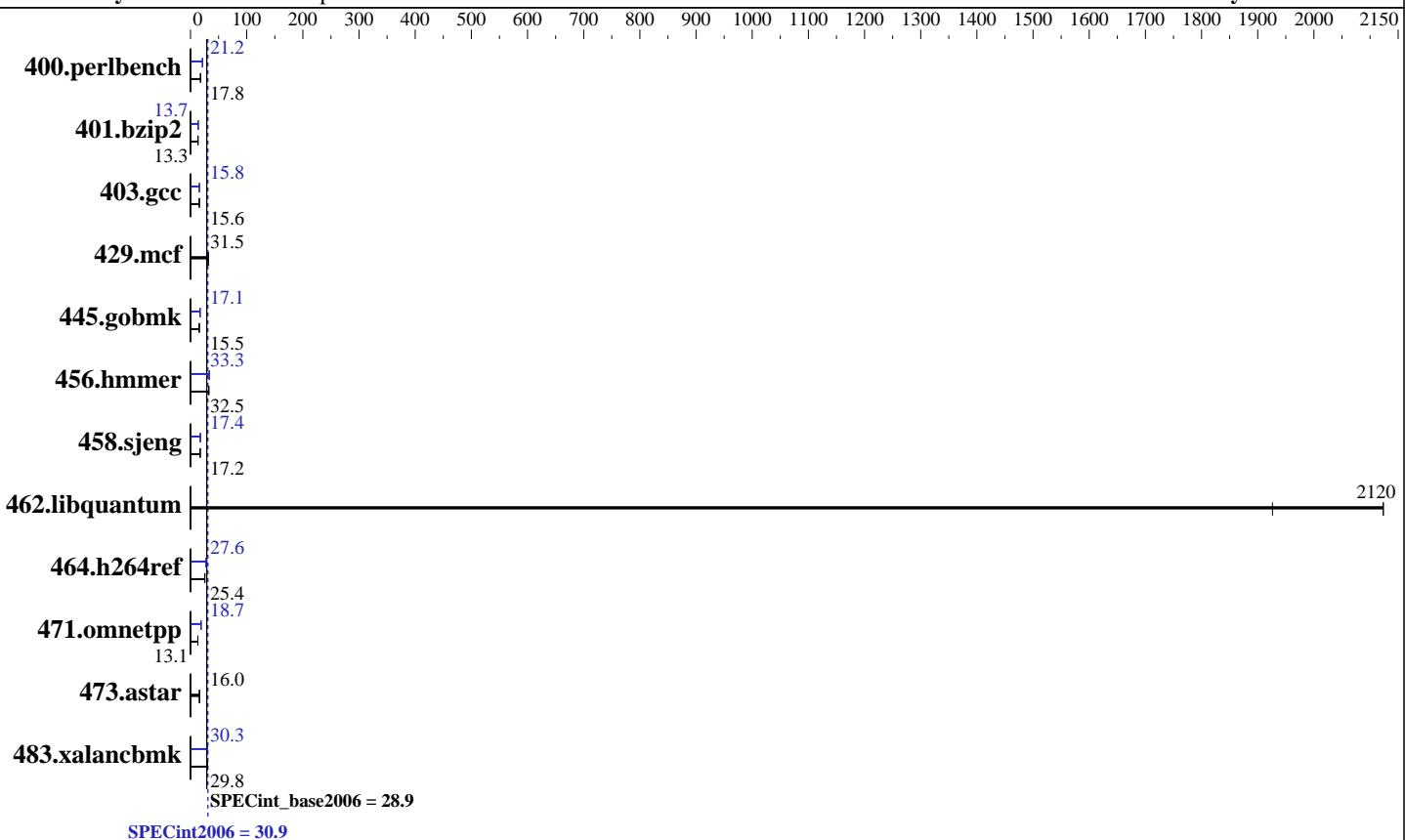SPECint_base2006 = 28.9

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

Test date: Dec-2011
Hardware Availability: Jun-2011
Software Availability: Oct-2011

Benchmark	Value 1	Value 2
400.perlbench	21.2	17.8
401.bzip2	13.7	13.3
403.gcc	15.8	15.6
429.mcf	31.5	
445.gobmk	17.1	15.5
456.hmmer	33.3	32.5
458.sjeng	17.4	17.2
462.libquantum	2120	
464.h264ref	27.6	25.4
471.omnetpp	18.7	13.1
473.astar	16.0	
483.xalancbmk	30.3	29.8

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Hardware

CPU Name: Intel Xeon E7-4820
CPU Characteristics: Intel Turbo Boost Technology up to 2.27 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip
CPU(s) orderable: 2,4 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: 18 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (64 x 4 GB 2Rx8 PC3L-10600R-9, ECC)
Disk Subsystem: 1 x 300 GB, SATA, 7200 RPM
Other Hardware: None

Software

Operating System: Oracle Linux 6.1
kernel 2.6.32-100.34.1.el6uek.x86_64
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 5 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	547	17.9	**548**	**17.8**	550	17.8	459	21.3	460	21.2	**460**	**21.2**
401.bzip2	725	13.3	726	13.3	**726**	**13.3**	706	13.7	706	13.7	**706**	**13.7**
403.gcc	**515**	**15.6**	514	15.7	515	15.6	510	15.8	510	15.8	**510**	**15.8**
429.mcf	290	31.4	290	31.5	**290**	**31.5**	290	31.4	290	31.5	**290**	**31.5**
445.gobmk	671	15.6	**678**	**15.5**	679	15.4	615	17.0	615	17.1	**615**	**17.1**
456.hmmer	287	32.5	287	32.5	**287**	**32.5**	280	33.4	280	33.3	**280**	**33.3**
458.sjeng	704	17.2	**704**	**17.2**	705	17.2	**694**	**17.4**	695	17.4	694	17.4
462.libquantum	**9.76**	**2120**	9.76	2120	10.8	1930	**9.76**	**2120**	9.76	2120	10.8	1930
464.h264ref	**871**	**25.4**	872	25.4	871	25.4	**800**	**27.6**	800	27.6	800	27.7
471.omnetpp	478	13.1	477	13.1	**477**	**13.1**	334	18.7	**334**	**18.7**	333	18.8
473.astar	**439**	**16.0**	439	16.0	446	15.7	**439**	**16.0**	439	16.0	446	15.7
483.xalancbmk	**232**	**29.8**	231	29.8	234	29.4	227	30.3	**228**	**30.3**	228	30.3

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

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
Load Default BIOS Settings and then change the following
  Intel Hyperthreading Option Disabled

Oracle's Sun Server X2-4 was formerly known as the Sun Fire X4470 M2
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006v1.2/libs/32:/home/cpu2006v1.2/libs/64"
OMP_NUM_THREADS = "32"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

Base Compiler Invocation

C benchmarks:
```
icc -m64
```

Continued on next page

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Base Compiler Invocation (Continued)

C++ benchmarks:
```
icpc -m64
```

Base Portability Flags

```
    400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
        401.bzip2: -DSPEC_CPU_LP64
          403.gcc: -DSPEC_CPU_LP64
          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_LINUX
      464.h264ref: -DSPEC_CPU_LP64
      471.omnetpp: -DSPEC_CPU_LP64
        473.astar: -DSPEC_CPU_LP64
    483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -Wl,-z,muldefs -L/smartheap -lsmartheap64
```

Base Other Flags

C benchmarks:
```
        403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc  -m64
```

```
    400.perlbench: icc -m32
```

```
      445.gobmk: icc -m32
```

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Peak Compiler Invocation (Continued)

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m32`

473.astar: `icpc -m64`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2)
`-O3`(pass 2) `-no-prec-div`(pass 2) `-prof-use`(pass 2)
`-opt-prefetch -ansi-alias`

401.bzip2: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2)
`-O3`(pass 2) `-no-prec-div -prof-use`(pass 2) `-auto-ilp32`
`-opt-prefetch -ansi-alias`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc`
`-opt-malloc-options=3 -auto-ilp32`

429.mcf: basepeak = yes

445.gobmk: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-prof-use`(pass 2)
`-ansi-alias`

456.hmmer: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
`-ansi-alias`

458.sjeng: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2)
`-O3`(pass 2) `-no-prec-div`(pass 2) `-prof-use`(pass 2)
`-unroll4`

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: `-xSSE4.2(pass 2)` `-prof-gen(pass 1)` `-ipo(pass 2)`
`-O3(pass 2)` `-no-prec-div(pass 2)` `-prof-use(pass 2)`
`-unroll2` `-ansi-alias`

C++ benchmarks:

471.omnetpp: `-xSSE4.2(pass 2)` `-prof-gen(pass 1)` `-ipo(pass 2)`
`-O3(pass 2)` `-no-prec-div(pass 2)` `-prof-use(pass 2)`
`-opt-ra-region-strategy=block`   `-ansi-alias`
`-Wl,-z,muldefs` `-L/smartheap` `-lsmartheap`

473.astar: basepeak = yes

483.xalancbmk: `-xSSE4.2` `-ipo` `-O3` `-no-prec-div` `-opt-prefetch` `-ansi-alias`
`-Wl,-z,muldefs` `-L/smartheap` `-lsmartheap`

Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.xml

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

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