SPEC® CINT2006 Result

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Oracle Corporation

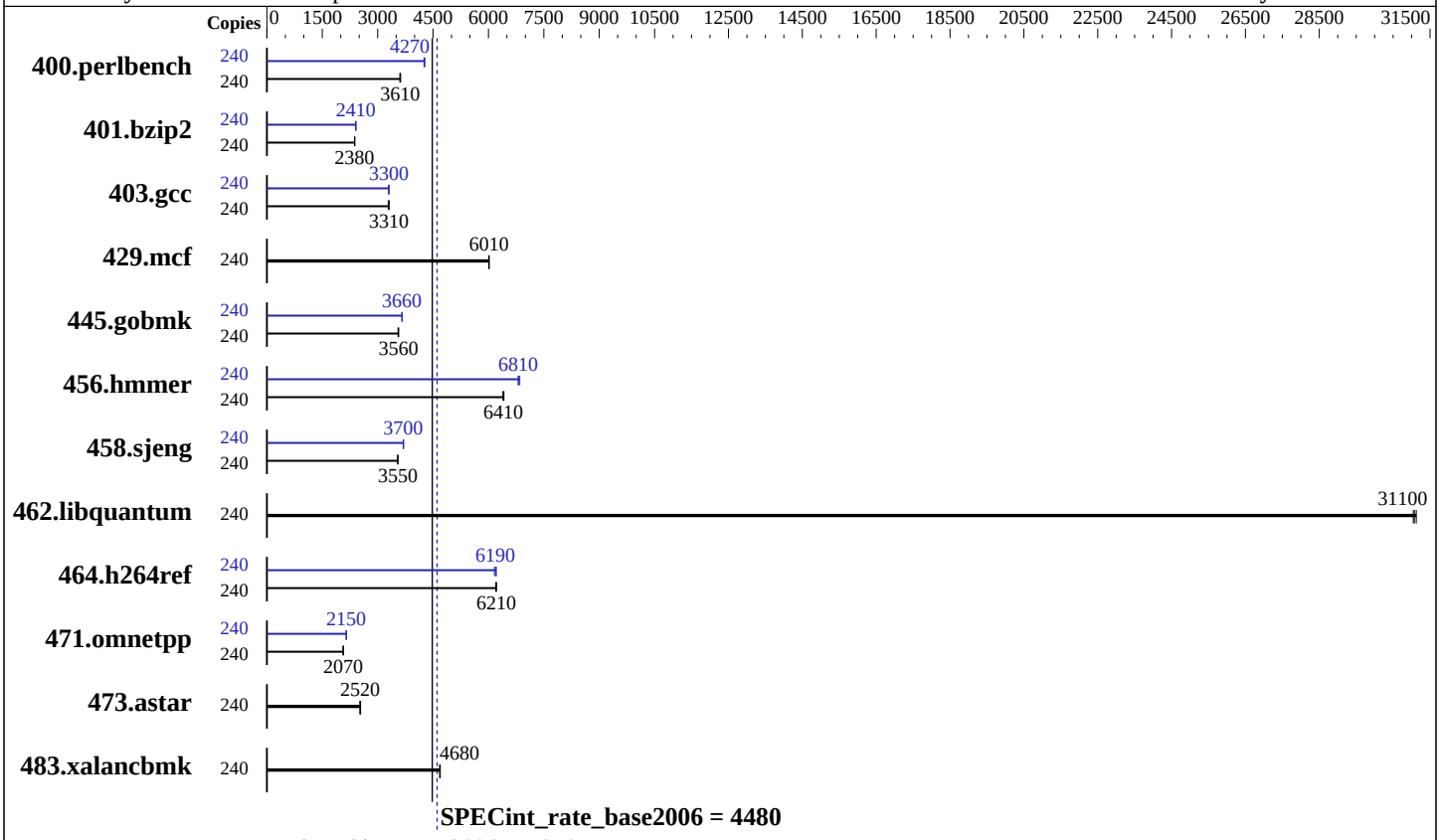
Sun Server X4-8 (Intel Xeon E7-8895 v2 2.80 GHz)

SPECint®_rate2006 = 4610

SPECint_rate_base2006 = 4480

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

Test date: Oct-2014
Hardware Availability: Mar-2014
Software Availability: Dec-2013



Hardware

CPU Name:	Intel Xeon E7-8895 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	120 cores, 8 chips, 15 cores/chip, 2 threads/core
CPU(s) orderable:	4,8 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:	38400 KB I+D on chip per chip
Other Cache:	None
Memory:	2 TB (128 x 16 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
Disk Subsystem:	1 x 500 GB, SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Oracle Linux 6.5 2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 5 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

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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	240	651	3600	648	3620	**649**	**3610**	240	549	4270	**549**	**4270**	551	4260
401.bzip2	240	975	2370	972	2380	**975**	**2380**	240	963	2400	961	2410	**962**	**2410**
403.gcc	240	584	3310	**584**	**3310**	588	3290	240	584	3310	**585**	**3300**	586	3300
429.mcf	240	364	6020	364	6010	**364**	**6010**	240	364	6020	364	6010	**364**	**6010**
445.gobmk	240	**707**	**3560**	709	3550	706	3570	240	687	3660	688	3660	**688**	**3660**
456.hmmer	240	349	6420	350	6390	**349**	**6410**	240	329	6810	327	6850	**329**	**6810**
458.sjeng	240	**819**	**3550**	819	3550	820	3540	240	784	3700	787	3690	**786**	**3700**
462.libquantum	240	**160**	**31100**	160	31100	160	31000	240	**160**	**31100**	160	31100	160	31000
464.h264ref	240	855	6210	857	6200	**855**	**6210**	240	862	6160	855	6210	**858**	**6190**
471.omnetpp	240	**726**	**2070**	726	2070	727	2060	240	698	2150	697	2150	**698**	**2150**
473.astar	240	664	2540	**668**	**2520**	669	2520	240	664	2540	**668**	**2520**	669	2520
483.xalancbmk	240	353	4700	**354**	**4680**	354	4680	240	353	4700	**354**	**4680**	354	4680

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

Submit Notes

```
The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

Operating System Notes

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

Platform Notes

```
Default BIOS Settings were used.
 Sysinfo program /home/cpu2006v1.2/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on bur-x4-8-001 Wed Oct 22 15:56:18 2014

 This section contains SUT (System Under Test) info as seen by
 some common utilities.  To remove or add to this section, see:
   http://www.spec.org/cpu2006/Docs/config.html#sysinfo

 From /proc/cpuinfo
    model name : Intel(R) Xeon(R) CPU E7-8895 v2 @ 2.80GHz
       8 "physical id"s (chips)
       240 "processors"
    cores, siblings (Caution: counting these is hw and system dependent.  The
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 15
```

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Platform Notes (Continued)

```
        siblings  : 30
        physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
        physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
        physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
        physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
        physical 4: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
        physical 5: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
        physical 6: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
        physical 7: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
     cache size : 38400 KB

  From /proc/meminfo
     MemTotal:       2117623372 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Oracle Linux Server release 6.5

  From /etc/*release* /etc/*version*
     oracle-release: Oracle Linux Server release 6.5
     redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
     system-release: Oracle Linux Server release 6.5
     system-release-cpe: cpe:/o:oracle:oracle_linux:6server:ga:server

  uname -a:
     Linux bur-x4-8-001 2.6.32-431.el6.x86_64 #1 SMP Wed Nov 20 23:56:07 PST 2013
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 5 Oct 22 15:13

  SPEC is set to: /home/cpu2006v1.2
     Filesystem                     Type  Size  Used Avail Use% Mounted on
     /dev/mapper/vg_burx48001-lv_home ext4  496G  118G  353G  26% /home

  Additional information from dmidecode:
    BIOS American Megatrends Inc. 29020400 08/22/2014
    Memory:
     128x   16 GB
     128x Hynix HMT42GR7AFR4A-PB 16 GB 1333 MHz 2 rank
     64x NO DIMM NO DIMM

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/home/cpu2006v1.2/libs/32:/home/cpu2006v1.2/libs/64:/home/cpu2006v1.2/sh"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RedHat EL 6.4
```

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General Notes (Continued)

```
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>       /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

C benchmarks:
```
icc  -m32
```

C++ benchmarks:
```
icpc -m32
```

Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -L/sh -lsmartheap
```

Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

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

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Peak Compiler Invocation (Continued)

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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)
-auto-ilp32

401.bzip2: -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 -auto-ilp32 -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

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

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 -auto-ilp32

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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) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revC.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revC.xml

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