SPEC® CINT2006 Result

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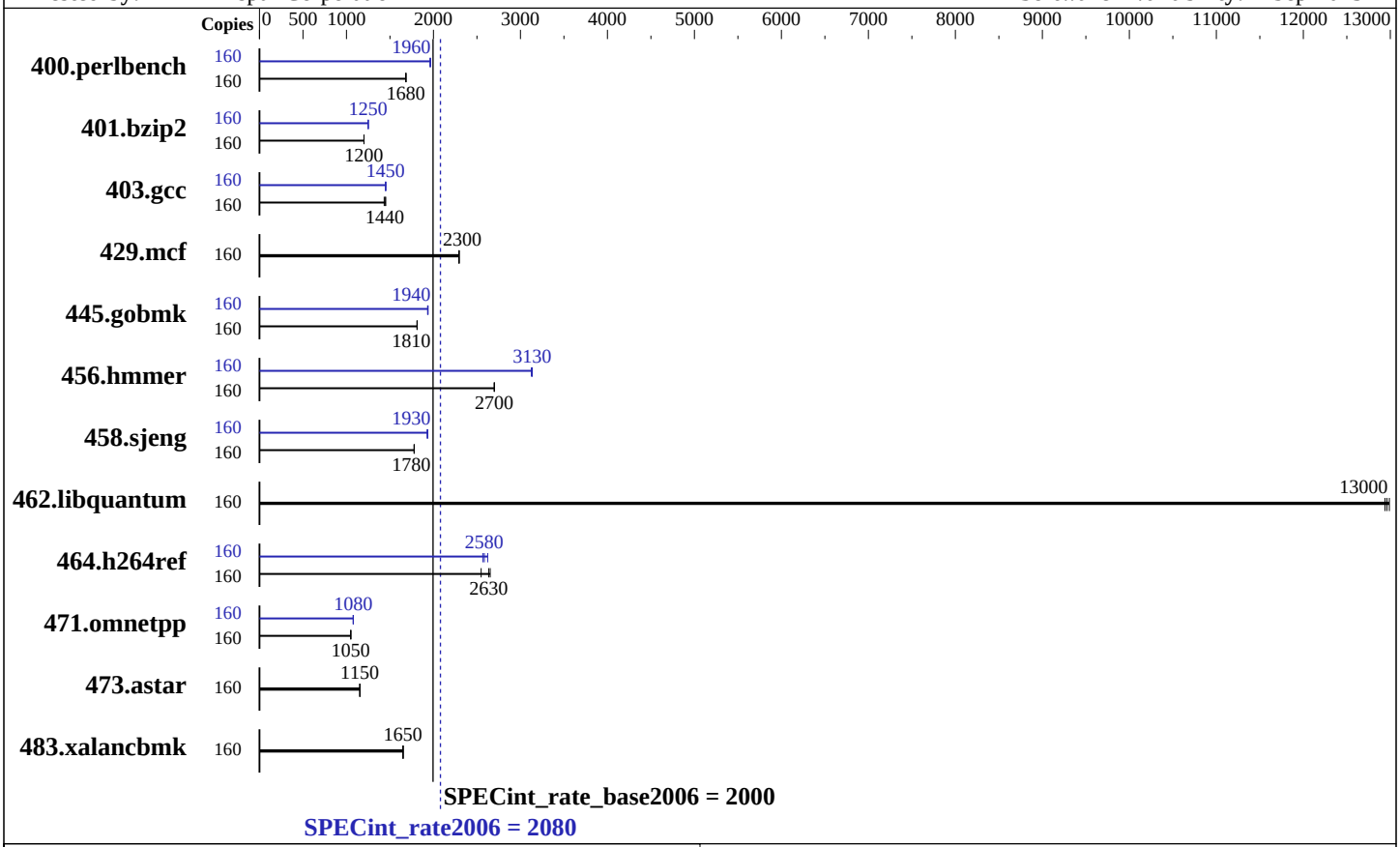
Inspur Corporation
K1 800

SPECint®_rate2006 = 2080

SPECint_rate_base2006 = 2000

CPU2006 license: 3358
Test sponsor: Inspur Corporation
Tested by: Inspur Corporation

Test date: Dec-2013
Hardware Availability: May-2012
Software Availability: Sep-2013



Hardware

CPU Name:	Intel Xeon E7-8870
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	80 cores, 8 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	8 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	2 TB (64 x 32 GB 4Rx4 PC3L-10600R-9, ECC, running at 1066 MHz)
Disk Subsystem:	4 x 300GB (SAS,10K RPM, RAID5)
Other Hardware:	None

Software

Operating System:	Inspur K-UX Server release 2.2 (Inspur) 2.6.32-358.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 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	160	931	1680	**928**	**1680**	927	1690	160	794	1970	797	1960	**797**	**1960**
401.bzip2	160	1285	1200	1285	1200	**1285**	**1200**	160	1234	1250	**1235**	**1250**	1236	1250
403.gcc	160	887	1450	898	1430	**892**	**1440**	160	889	1450	886	1450	**889**	**1450**
429.mcf	160	637	2290	**636**	**2300**	636	2300	160	637	2290	**636**	**2300**	636	2300
445.gobmk	160	927	1810	**926**	**1810**	925	1810	160	866	1940	868	1930	**867**	**1940**
456.hmmer	160	553	2700	553	2700	**553**	**2700**	160	476	3140	**476**	**3130**	478	3130
458.sjeng	160	**1089**	**1780**	1088	1780	1089	1780	160	**1003**	**1930**	1004	1930	1001	1930
462.libquantum	160	**256**	**13000**	256	12900	255	13000	160	**256**	**13000**	256	12900	255	13000
464.h264ref	160	**1344**	**2630**	1335	2650	1389	2550	160	1379	2570	**1370**	**2580**	1350	2620
471.omnetpp	160	953	1050	**953**	**1050**	952	1050	160	**928**	**1080**	928	1080	927	1080
473.astar	160	974	1150	972	1160	**973**	**1150**	160	974	1150	972	1160	**973**	**1150**
483.xalancbmk	160	**669**	**1650**	670	1650	668	1650	160	**669**	**1650**	670	1650	668	1650

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

```
Sysinfo program /spec/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost Fri Dec 20 18:38:00 2013

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- 8870 @ 2.40GHz
      8 "physical id"s (chips)
      160 "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 : 10
      siblings  : 20
```

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Platform Notes (Continued)

```
        physical 0: cores 0 1 2 3 4 5 6 7 8 9
        physical 1: cores 0 1 2 3 4 5 6 7 8 9
        physical 2: cores 0 1 2 3 4 5 6 7 8 9
        physical 3: cores 0 1 2 3 4 5 6 7 8 9
        physical 4: cores 0 1 2 3 4 5 6 7 8 9
        physical 5: cores 0 1 2 3 4 5 6 7 8 9
        physical 6: cores 0 1 2 3 4 5 6 7 8 9
        physical 7: cores 0 1 2 3 4 5 6 7 8 9
     cache size : 30720 KB

  From /proc/meminfo
     MemTotal:       2117712864 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  From /etc/*release* /etc/*version*
     inspur-release: Inspur K-UX Server release 2.2 (Inspur)
     system-release: Inspur K-UX Server release 2.2 (Inspur)
     system-release-cpe: cpe:/o:inspur:k-ux:2.2:ga:server

  uname -a:
     Linux localhost 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Dec 20 18:30

  SPEC is set to: /spec/cpu2006
     Filesystem     Type    Size  Used Avail Use% Mounted on
     /dev/sda1      ext4    577G  6.7G  541G   2% /spec

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/spec/cpu2006/libs/32:/spec/cpu2006/libs/64:/spec/cpu2006/sh"

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

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

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

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Peak Optimization Flags (Continued)

483.xalancbmk: `basepeak = yes`

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-ic14.0-official-linux64.20140128.html`
`http://www.spec.org/cpu2006/flags/Inspur-K1-Platform-Settings-V1.2.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml`
`http://www.spec.org/cpu2006/flags/Inspur-K1-Platform-Settings-V1.2.xml`

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