SPEC® CINT2006 Result

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Huawei

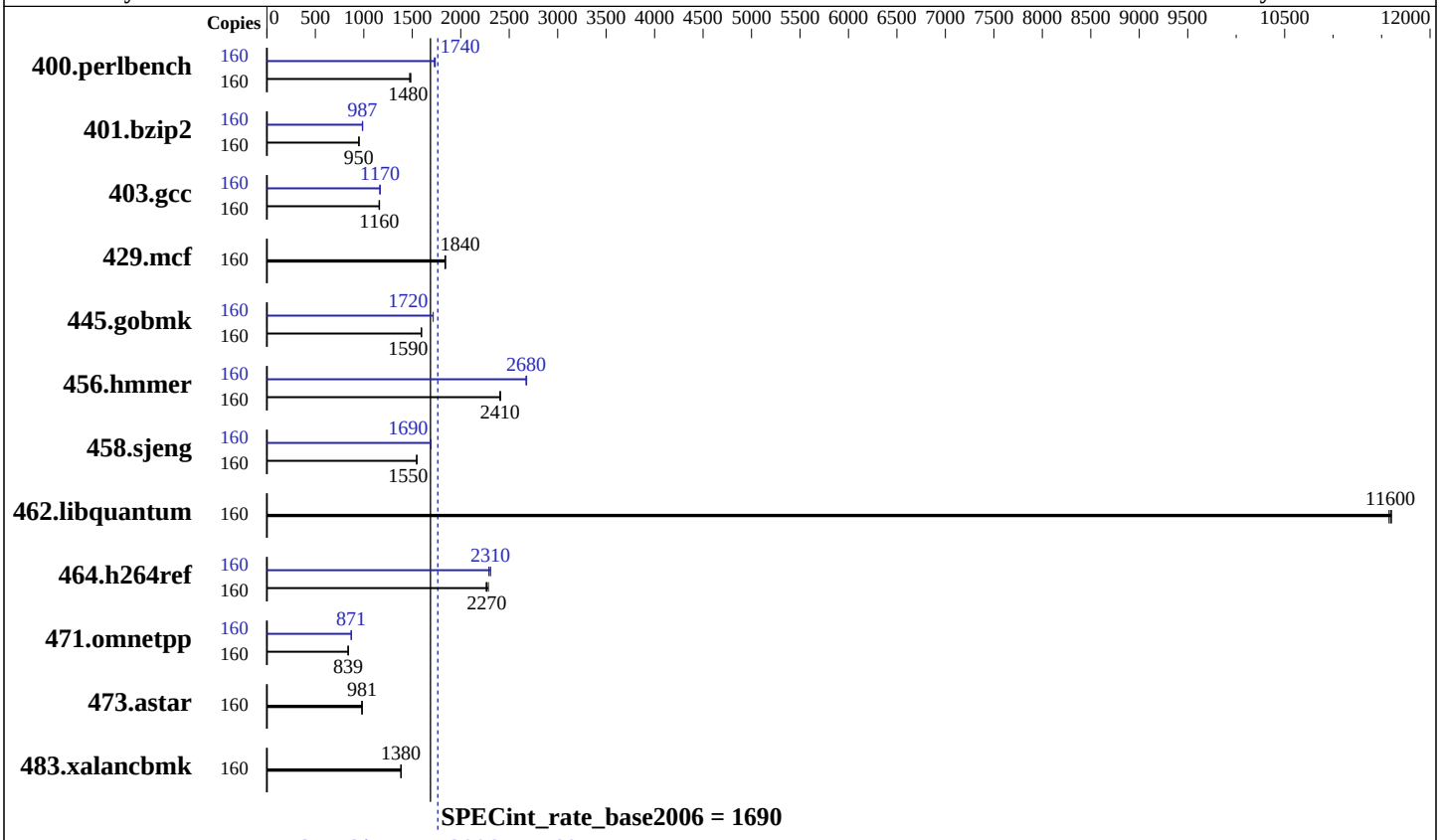
Tecal Huawei RH5885 V2 (Intel Xeon E7-8850)

SPECint®_rate2006 = 1760

SPECint_rate_base2006 = 1690

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Test date: Aug-2013
Hardware Availability: Oct-2012
Software Availability: Oct-2012



Hardware

CPU Name:	Intel Xeon E7-8850
CPU Characteristics:	Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	80 cores, 8 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	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:	24 MB I+D on chip per chip
Other Cache:	None
Memory:	2 TB (128 x 16 GB 4Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
Disk Subsystem:	2 x 300 GB SAS, 10K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.el6.x86_64
Compiler:	C/C++: Version 13.0.0.079 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

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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	160	**1056**	**1480**	1062	1470	1053	1480	160	900	1740	905	1730	**901**	**1740**
401.bzip2	160	**1626**	**950**	1627	949	1625	950	160	**1564**	**987**	1568	985	1563	988
403.gcc	160	1113	1160	1108	1160	**1110**	**1160**	160	1102	1170	1105	1170	**1104**	**1170**
429.mcf	160	794	1840	**793**	**1840**	792	1840	160	794	1840	**793**	**1840**	792	1840
445.gobmk	160	1053	1590	**1053**	**1590**	1053	1590	160	979	1710	**979**	**1720**	978	1720
456.hmmer	160	621	2410	**620**	**2410**	620	2410	160	557	2680	**558**	**2680**	558	2670
458.sjeng	160	**1252**	**1550**	1253	1550	1251	1550	160	1145	1690	1143	1690	**1143**	**1690**
462.libquantum	160	286	11600	**286**	**11600**	286	11600	160	286	11600	**286**	**11600**	286	11600
464.h264ref	160	**1561**	**2270**	1565	2260	1550	2280	160	1535	2310	1547	2290	**1536**	**2310**
471.omnetpp	160	**1193**	**839**	1193	838	1192	839	160	1150	869	1147	872	**1148**	**871**
473.astar	160	**1145**	**981**	1146	980	1143	983	160	**1145**	**981**	1146	980	1143	983
483.xalancbmk	160	799	1380	797	1380	**798**	**1380**	160	799	1380	797	1380	**798**	**1380**

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

```
BIOS configuration:
Power Technology set to Custom, Performance/Watt set to Traditional,Disable C3/C6 state
Sysinfo program /speccpu/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on huawei5885 Fri Aug  2 16:23:06 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 E7-8850 @ 2.00GHz
      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.)
```

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Platform Notes (Continued)

```
        cpu cores : 10
        siblings  : 20
        physical 0: cores 0 1 2 8 9 16 17 18 24 25
        physical 1: cores 0 1 2 8 9 16 17 18 24 25
        physical 2: cores 0 1 2 8 9 16 17 18 24 25
        physical 3: cores 0 1 2 8 9 16 17 18 24 25
        physical 4: cores 0 1 2 8 9 16 17 18 24 25
        physical 5: cores 0 1 2 8 9 16 17 18 24 25
        physical 6: cores 0 1 2 8 9 16 17 18 24 25
        physical 7: cores 0 1 2 8 9 16 17 18 24 25
     cache size : 24576 KB

  From /proc/meminfo
     MemTotal:       2117588376 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Red Hat Enterprise Linux Server release 6.4 (Santiago)

  From /etc/*release* /etc/*version*
     redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
     system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

  uname -a:
     Linux huawei5885 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 Aug 2 11:59

  SPEC is set to: /speccpu
     Filesystem     Type    Size  Used Avail Use% Mounted on
     /dev/sda2      ext4    500G  7.6G  467G   2% /speccpu

  Additional information from dmidecode:
    Memory:
     128x Samsung M393B2K70CM0-CH9 16 GB 1067 MHz 4 rank

  (End of data from sysinfo program)
```

General Notes

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

  Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory
  using RHEL 6.4
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
  Filesystem page cache cleared with:
```

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General Notes (Continued)

```
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/speccpu/smartheap -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`

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Peak Compiler Invocation (Continued)

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

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Peak Optimization Flags (Continued)

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/speccpu/smartheap -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-ic13-official-linux64.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml`

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