SPEC® CINT2006 Result

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Huawei

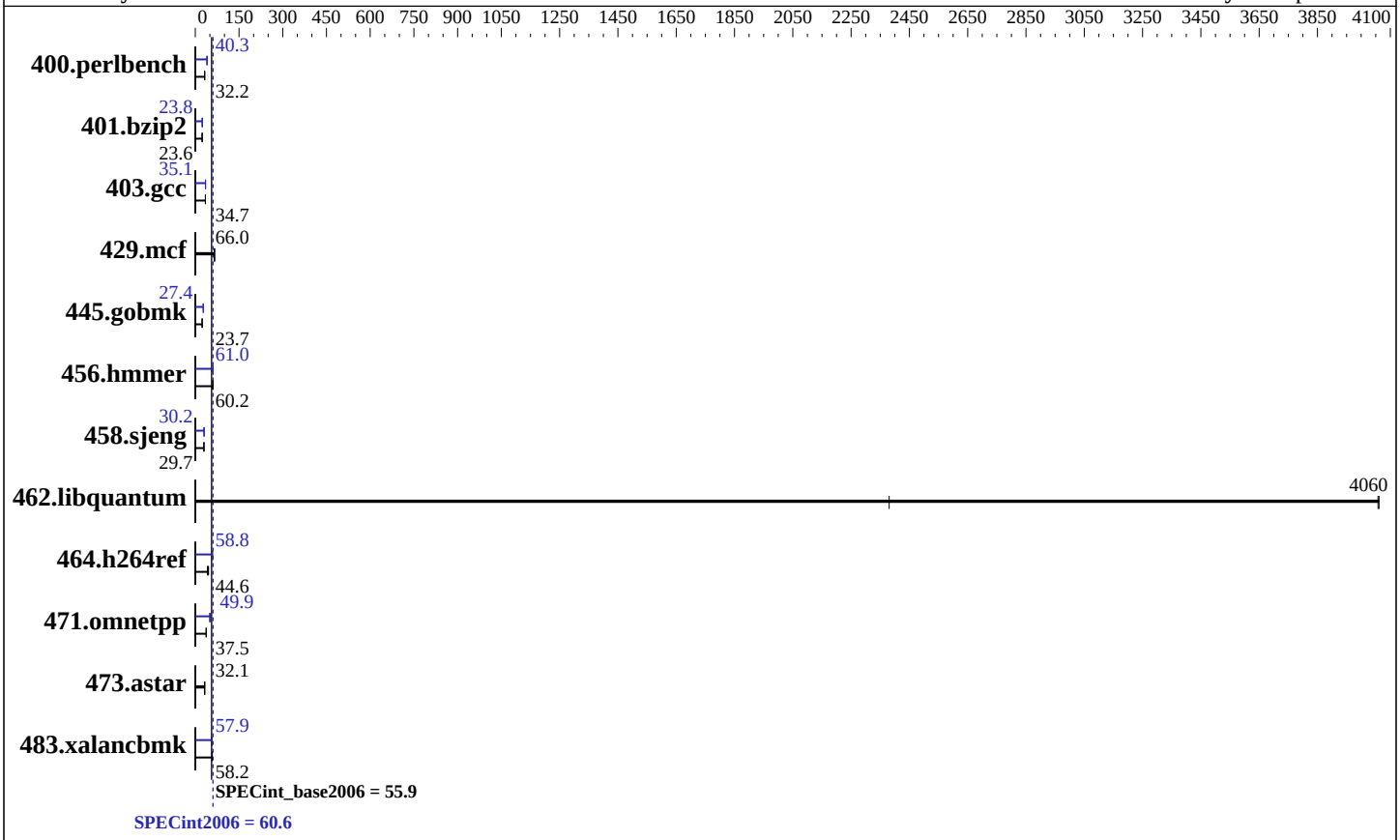
Huawei E9000 CH121 (Intel Xeon E5-2697 v2)

SPECint®2006 = 60.6

SPECint_base2006 = 55.9

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

Test date: Sep-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013



Hardware

CPU Name:	Intel Xeon E5-2697 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2700
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 cores/chip
CPU(s) orderable:	1,2 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:	128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	1 x 300 GB SAS, 10K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.14.1.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	305	32.0	303	32.2	**304**	**32.2**	**243**	**40.3**	242	40.3	243	40.1
401.bzip2	410	23.6	**410**	**23.6**	409	23.6	405	23.8	405	23.8	**405**	**23.8**
403.gcc	233	34.6	231	34.8	**232**	**34.7**	229	35.1	230	35.0	**230**	**35.1**
429.mcf	140	65.3	**138**	**66.0**	138	66.1	140	65.3	**138**	**66.0**	138	66.1
445.gobmk	**443**	**23.7**	439	23.9	455	23.1	382	27.4	382	27.4	**382**	**27.4**
456.hmmer	**155**	**60.2**	153	60.8	155	60.1	**153**	**61.0**	154	60.7	153	61.1
458.sjeng	**408**	**29.7**	408	29.6	408	29.7	**401**	**30.2**	401	30.2	401	30.2
462.libquantum	8.70	2380	5.10	4060	**5.11**	**4060**	8.70	2380	5.10	4060	**5.11**	**4060**
464.h264ref	487	45.4	533	41.5	**496**	**44.6**	**377**	**58.8**	377	58.7	376	58.8
471.omnetpp	167	37.3	**167**	**37.5**	166	37.6	125	49.8	**125**	**49.9**	123	51.0
473.astar	**218**	**32.1**	217	32.3	219	32.1	**218**	**32.1**	217	32.3	219	32.1
483.xalancbmk	119	58.1	118	58.3	**119**	**58.2**	**119**	**57.9**	119	57.9	119	57.9

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

```
BIOS Configurations:
VT Support set to Disabled
Memory Power Saving set to Disabled
ISOCH set to Disabled
C3 and C6 set to Enabled
HT Support set to Disabled
Sysinfo program /spec14/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on RH64-spec Sat Aug 31 02:54:57 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 E5-2697 v2 @ 2.70GHz
      2 "physical id"s (chips)
      24 "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 : 12
      siblings  : 12
```

Continued on next page

Platform Notes (Continued)

```
        physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
     cache size : 30720 KB

  From /proc/meminfo
     MemTotal:       132103952 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 RH64-spec 2.6.32-358.14.1.el6.x86_64 #1 SMP Tue Jul 16 23:51:20 UTC
     2013 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Aug 31 02:41

  SPEC is set to: /spec14
     Filesystem     Type    Size  Used Avail Use% Mounted on
     /dev/sda2      ext4    289G   39G  236G  14% /

  Additional information from dmidecode:
    BIOS Insyde Corp. RMIBV109 08/29/2013
    Memory:
     8x NO DIMM NO DIMM
     6x Samsung M393B1K70CH0-CH9 8 GB 1867 MHz 2 rank
     10x Samsung M393B1K70DH0-CH9 8 GB 1867 MHz 2 rank

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/spec14/libs/32:/spec14/libs/64:/spec14/sh"
 OMP_NUM_THREADS = "24"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RHEL 6.4
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
  runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

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

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/sh -lsmartheap64
```

Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

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

Continued on next page

Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `icc -m32`

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`

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Peak Optimization Flags (Continued)

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`

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/sh -lsmartheap`

473.astar: `basepeak = yes`

483.xalancbmk: `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -L/sh -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/Huawei-Platform-Settings-revG.20131009.html`
`http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revG.20131009.xml`
`http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml`

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