SPEC® CINT2006 Result

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HITACHI

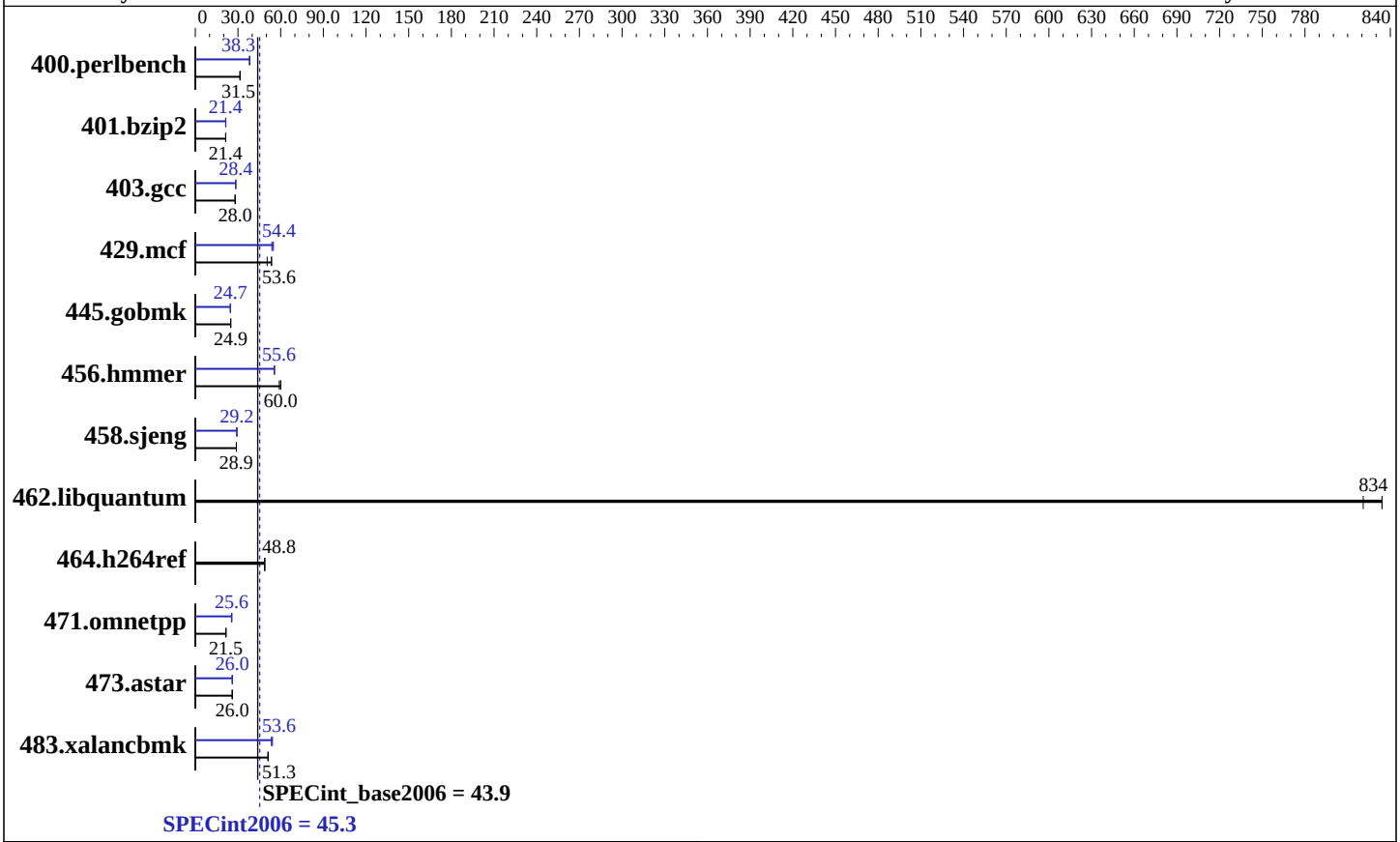
HA8000-bd (Intel Core i3-4150T)

SPECint®2006 = 45.3

SPECint_base2006 = 43.9

CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Sep-2014
Hardware Availability: Oct-2014
Software Availability: Feb-2013



Hardware

CPU Name:	Intel Core i3-4150T
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1 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:	3 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB (4 x 8 GB 2Rx8 PC3-12800E-11, ECC)
Disk Subsystem:	1 x 1000 GB SATA, 7200RPM
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 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	310	31.5	311	31.4	**310**	**31.5**	**255**	**38.3**	255	38.3	257	38.0
401.bzip2	451	21.4	**452**	**21.4**	452	21.3	**452**	**21.4**	449	21.5	452	21.3
403.gcc	**287**	**28.0**	287	28.0	287	28.1	283	28.4	283	28.5	**283**	**28.4**
429.mcf	181	50.5	170	53.6	**170**	**53.6**	**168**	**54.4**	170	53.8	166	54.9
445.gobmk	421	24.9	421	24.9	**421**	**24.9**	**425**	**24.7**	425	24.7	426	24.6
456.hmmer	155	60.1	**156**	**60.0**	158	59.0	168	55.7	168	55.5	**168**	**55.6**
458.sjeng	**419**	**28.9**	419	28.9	419	28.9	415	29.2	**414**	**29.2**	414	29.2
462.libquantum	25.2	821	**24.8**	**834**	24.8	834	25.2	821	**24.8**	**834**	24.8	834
464.h264ref	**453**	**48.8**	455	48.7	453	48.9	**453**	**48.8**	455	48.7	453	48.9
471.omnetpp	290	21.5	**290**	**21.5**	290	21.5	**244**	**25.6**	246	25.4	243	25.7
473.astar	269	26.1	270	26.0	**270**	**26.0**	**270**	**26.0**	271	25.9	269	26.1
483.xalancbmk	134	51.4	**134**	**51.3**	135	50.9	**129**	**53.6**	127	54.3	129	53.6

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

Submit Notes

```
The config file option 'submit' was used.
```

Operating System Notes

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

Platform Notes

```
Sysinfo program /home/user/cpu2006/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Tue Sep  9 20:21:14 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) Core(TM) i3-4150T CPU @ 3.00GHz
      1 "physical id"s (chips)
      4 "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 : 2
      siblings  : 4
      physical 0: cores 0 1
   cache size : 3072 KB
```

Continued on next page

Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:       32827836 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 localhost.localdomain 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 Sep 8 19:49

SPEC is set to: /home/user/cpu2006/cpu2006
   Filesystem     Type    Size  Used Avail Use% Mounted on
   /dev/mapper/VolGroup-lv_home
                  ext4     20G   14G  5.5G  71% /home

Additional information from dmidecode:
  BIOS American Megatrends Inc. P2_03 09/04/2014
  Memory:
   4x   8 GB
   4x 1323 SMD3L-N8G28HA-16K 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/user/cpu2006/cpu2006/libs/32:/home/user/cpu2006/cpu2006/libs/64:/home/user/cpu2006/cpu2006/sh"
OMP_NUM_THREADS = "2"

 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
 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:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:
```
-xCORE-AVX2 -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

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
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
-opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

Continued on next page

Peak Optimization Flags (Continued)

458.sjeng: -xCORE-AVX2(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: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -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/Intel-ic14.0-official-linux64-revC.html
http://www.spec.org/cpu2006/flags/PlatformHitachi-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-revC.xml
http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.xml

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