



SPEC[®] CINT2006 Result

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HITACHI

SPECint[®]2006 = 60.7

HA8000-bd (Intel Xeon E3-1275L v3)

SPECint_base2006 = 58.2

CPU2006 license: 35

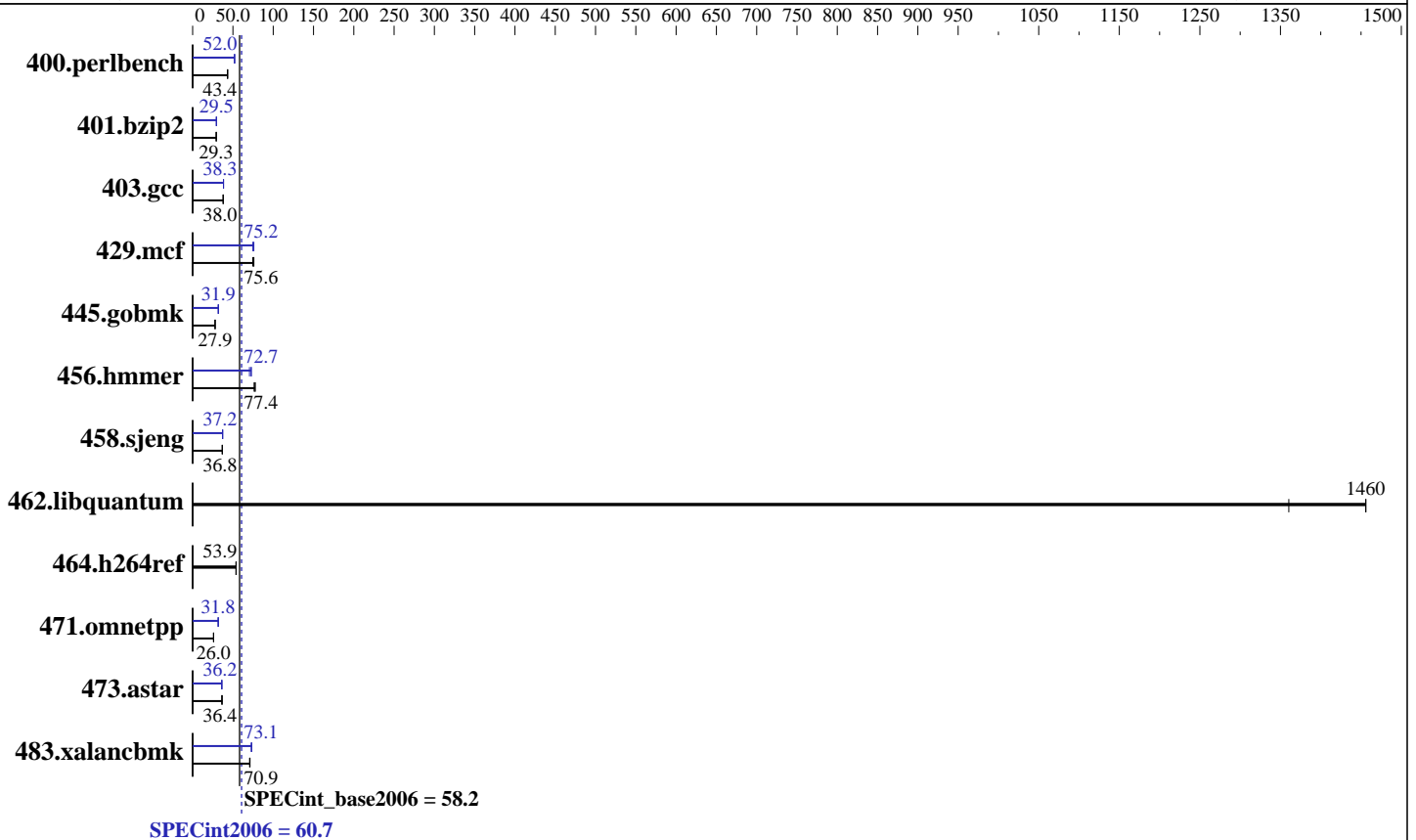
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Sep-2014

Hardware Availability: Oct-2014

Software Availability: Feb-2013



Hardware

CPU Name: Intel Xeon E3-1275L v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 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: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (4 x 8 GB 2Rx8 PC3-12800E-11, ECC)
 Disk Subsystem: 3 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	226	43.3	<u>225</u>	<u>43.4</u>	225	43.4	187	52.2	<u>188</u>	<u>52.0</u>	188	51.9
401.bzip2	330	29.2	328	29.4	<u>330</u>	<u>29.3</u>	327	29.5	<u>327</u>	<u>29.5</u>	327	29.5
403.gcc	213	37.9	212	38.0	<u>212</u>	<u>38.0</u>	210	38.4	<u>210</u>	<u>38.3</u>	210	38.3
429.mcf	<u>121</u>	<u>75.6</u>	120	76.0	122	74.6	122	74.9	120	76.0	<u>121</u>	<u>75.2</u>
445.gobmk	<u>376</u>	<u>27.9</u>	377	27.8	376	27.9	329	31.9	<u>329</u>	<u>31.9</u>	329	31.9
456.hammer	122	76.3	<u>120</u>	<u>77.4</u>	120	77.6	132	70.5	<u>128</u>	<u>72.7</u>	128	72.7
458.sjeng	329	36.8	<u>329</u>	<u>36.8</u>	329	36.8	<u>325</u>	<u>37.2</u>	325	37.2	326	37.1
462.libquantum	15.2	1360	<u>14.2</u>	<u>1460</u>	14.2	1460	15.2	1360	<u>14.2</u>	<u>1460</u>	14.2	1460
464.h264ref	410	54.0	411	53.8	<u>410</u>	<u>53.9</u>	410	54.0	411	53.8	<u>410</u>	<u>53.9</u>
471.omnetpp	240	26.0	241	25.9	<u>240</u>	<u>26.0</u>	196	31.8	<u>197</u>	<u>31.8</u>	197	31.7
473.astar	<u>193</u>	<u>36.4</u>	194	36.2	192	36.6	193	36.3	<u>194</u>	<u>36.2</u>	195	36.1
483.xalancbmk	<u>97.4</u>	<u>70.9</u>	97.5	70.8	96.9	71.2	<u>94.3</u>	<u>73.1</u>	94.9	72.7	94.1	73.3

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/cpu2006/cpu2006/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Wed Sep 10 00:22:46 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 E3-1275L v3 @ 2.70GHz
 1 "physical id"s (chips)
 8 "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 : 4
siblings : 8
physical 0: cores 0 1 2 3
cache size : 8192 KB
```

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Platform Notes (Continued)

From /proc/meminfo

```
MemTotal:      32958224 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 19:58

SPEC is set to: /home/cpu2006/cpu2006

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_home
                ext4      172G  21G  144G  13% /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/cpu2006/cpu2006/libs/32:/home/cpu2006/cpu2006/libs/64:/home/cpu2006/cpu2006/sh"

OMP_NUM_THREADS = "4"

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>



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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

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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`

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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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For other inquiries, please contact webmaster@spec.org.

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Standard Performance Evaluation Corporation

info@spec.org

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