



SPEC® CINT2006 Result

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HITACHI

SPECint®2006 = 56.4

BladeSymphony BS520H (Intel Xeon E5-2670 v2)

SPECint_base2006 = 52.2

CPU2006 license: 35

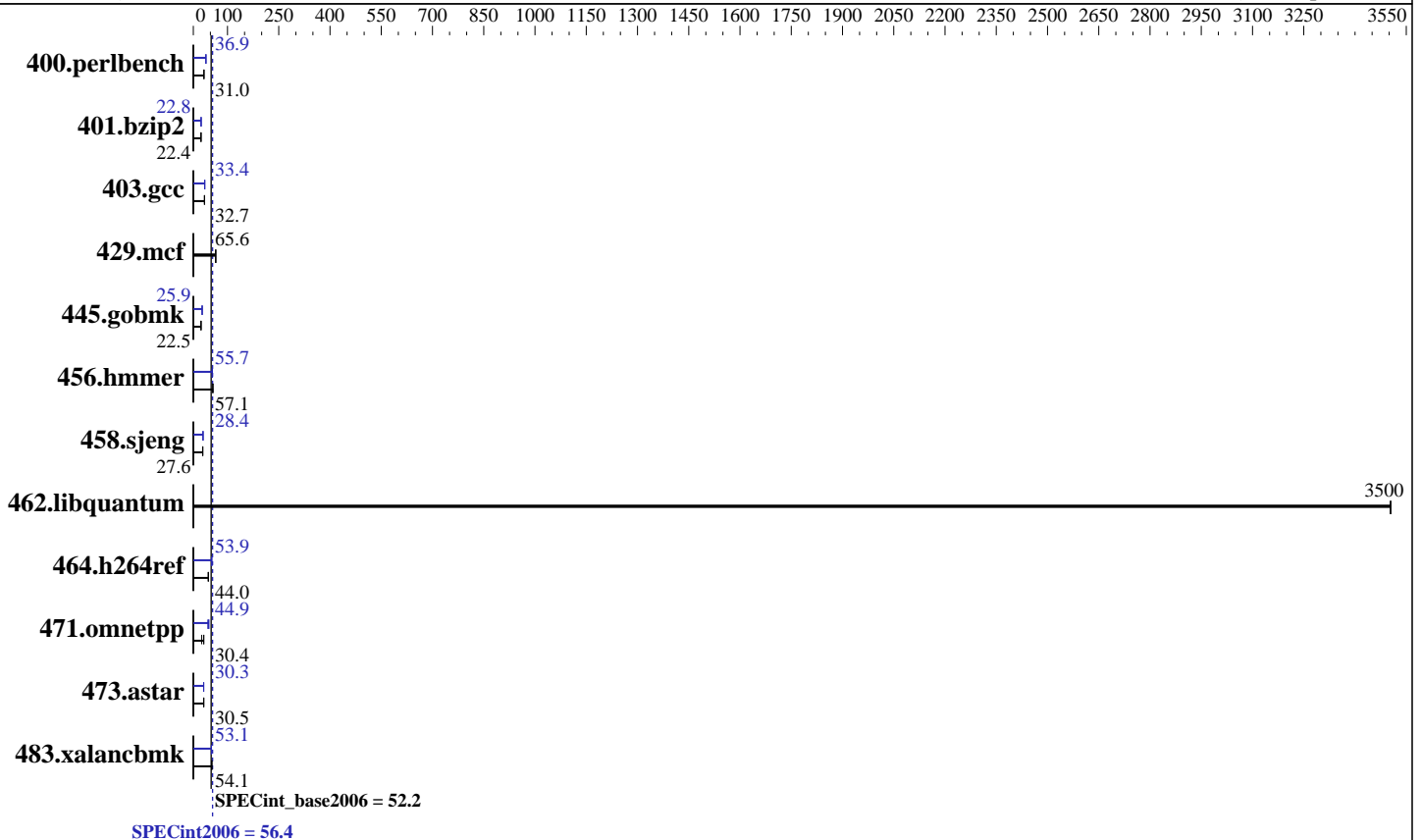
Test date: Mar-2014

Test sponsor: HITACHI

Hardware Availability: Feb-2014

Tested by: HITACHI

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2670 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core
 CPU(s) orderable: 1, 2 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: 25 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)

Disk Subsystem: 1 x 146 GB SAS, 15000 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
 2.6.32-358.23.2.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 | 314 | 31.1 | <u>315</u> | <u>31.0</u> | 315 | 31.0 | 264 | 37.0 | <u>265</u> | <u>36.9</u> | 266 | 36.7 |
| 401.bzip2 | 430 | 22.4 | 431 | 22.4 | <u>430</u> | <u>22.4</u> | 424 | 22.8 | <u>424</u> | <u>22.8</u> | 424 | 22.8 |
| 403.gcc | 246 | 32.7 | 246 | 32.7 | <u>246</u> | <u>32.7</u> | 241 | 33.4 | <u>241</u> | <u>33.4</u> | 241 | 33.4 |
| 429.mcf | 139 | 65.6 | <u>139</u> | <u>65.6</u> | 139 | 65.5 | 139 | 65.6 | <u>139</u> | <u>65.6</u> | 139 | 65.5 |
| 445.gobmk | <u>467</u> | <u>22.5</u> | 467 | 22.5 | 466 | 22.5 | <u>406</u> | <u>25.9</u> | 405 | 25.9 | 406 | 25.9 |
| 456.hammer | <u>163</u> | <u>57.1</u> | 162 | 57.4 | 164 | 56.8 | 167 | 55.8 | 170 | 54.9 | <u>168</u> | <u>55.7</u> |
| 458.sjeng | 438 | 27.6 | <u>439</u> | <u>27.6</u> | 439 | 27.6 | 426 | 28.4 | 427 | 28.4 | <u>426</u> | <u>28.4</u> |
| 462.libquantum | 5.91 | 3500 | 5.91 | 3500 | <u>5.91</u> | <u>3500</u> | 5.91 | 3500 | 5.91 | 3500 | <u>5.91</u> | <u>3500</u> |
| 464.h264ref | <u>503</u> | <u>44.0</u> | 503 | 44.0 | 504 | 43.9 | 411 | 53.9 | <u>411</u> | <u>53.9</u> | 411 | 53.8 |
| 471.omnetpp | <u>206</u> | <u>30.4</u> | 203 | 30.7 | 254 | 24.6 | 137 | 45.6 | <u>139</u> | <u>44.9</u> | 147 | 42.4 |
| 473.astar | 230 | 30.5 | <u>230</u> | <u>30.5</u> | 231 | 30.4 | 232 | 30.3 | 231 | 30.4 | <u>232</u> | <u>30.3</u> |
| 483.xalancbmk | 127 | 54.2 | 128 | 54.0 | <u>128</u> | <u>54.1</u> | <u>130</u> | <u>53.1</u> | 130 | 53.0 | 130 | 53.2 |

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/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Mon Mar 17 20:25:42 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 E5-2670 v2 @ 2.50GHz
 2 "physical id"s (chips)
 40 "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
physical 0: cores 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12
```

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Platform Notes (Continued)

cache size : 25600 KB

From /proc/meminfo

MemTotal: 132193960 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 2.6.32-358.23.2.el6.x86_64 #1 SMP Sat Sep 14 05:32:37 EDT 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 17 20:17

SPEC is set to: /home/cpu2006

| Filesystem | Type | Size | Used | Avail | Use% | Mounted on |
|------------------------------|------|------|------|-------|------|------------|
| /dev/mapper/VolGroup-lv_root | ext4 | 133G | 17G | 110G | 13% | / |

Additional information from dmidecode:

BIOS HITACHI EP1043 02/04/2014

Memory:

16x Not Specified Not Specified

8x Samsung M393B2G70QH0-CMA 16 GB 1867 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,scatter"

LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

OMP_NUM_THREADS = "20"

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>

BladeSymphony BS520H and Hitachi Compute Blade 520H are electronically equivalent.

The results have been measured on a BladeSymphony BS520H



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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:

-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xAVX -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`

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: `-xAVX(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: `-xAVX(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: `-xAVX -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias`

456.hmmer: `-xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias`

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Peak Optimization Flags (Continued)

458.sjeng: -xAVX(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: -xAVX(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: -xAVX(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.aster: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xAVX -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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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