SPEC® CINT2006 Result

Huawei

Huawei RH1288 V3 (Intel Xeon E5-2650 v4)

SPECint®2006 = NC
SPECint_base2006 = NC

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

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by SPEC CPU rule 1.3.2 and the SPEC Open Systems Group policy on general availability.

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon E5-2650 v4</td>
<td>Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64</td>
</tr>
<tr>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz</td>
<td>Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>CPU MHz: 2200</td>
<td>Auto Parallel: Yes</td>
</tr>
<tr>
<td>FPU: Integrated</td>
<td>File System: ext4</td>
</tr>
<tr>
<td>CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>CPU(s) orderable: 1,2 chip</td>
<td>Base Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>Other Software: Microquill SmartHeap V10.2</td>
</tr>
<tr>
<td>L3 Cache: 30 MB I+D on chip per chip</td>
<td></td>
</tr>
</tbody>
</table>
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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</tr>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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<td>401.bzip2</td>
<td>NC</td>
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<td>403.gcc</td>
<td>NC</td>
<td>NC</td>
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<tr>
<td>429.mcf</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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</tr>
<tr>
<td>445.gobmk</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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<tr>
<td>456.hmmer</td>
<td>NC</td>
<td>NC</td>
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<tr>
<td>458.sjeng</td>
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<td>NC</td>
<td>NC</td>
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<tr>
<td>462.libquantum</td>
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<td>NC</td>
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<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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<td>NC</td>
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<tr>
<td>464.h264ref</td>
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<tr>
<td>471.omnetpp</td>
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<tr>
<td>473.astar</td>
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<td>NC</td>
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<tr>
<td>483.xalancbmk</td>
<td>NC</td>
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<td>NC</td>
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</tr>
</tbody>
</table>

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

BIOS configuration:
Set Power Efficiency Mode to Custom
Set Snoop Mode to ES mode
Set Patrol Scrub to Disable
Set Hyper-Threading to Disable
Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Fri Jan 17 23:13:56 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page
Huawei
Huawei RH1288 V3 (Intel Xeon E5-2650 v4)

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

Test date: Mar-2016
Hardware Availability: Mar-2016
Software Availability: Mar-2016

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Platform Notes (Continued)

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2650 v4 @ 2.20GHz
2 "physical id"s (chips)
24 "processors"
cores, siblings (Caution: counting these is CPU and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 12
siblings : 12
physical 0: cores 0 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB

From /proc/meminfo
MemTotal: 263570248 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:ga:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 17 17:26

SPEC is set to: /spec16
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 913G 94G 773G 11% /

Additional information from dmidecode:

Continued on next page
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Platform Notes (Continued)

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the DMTF SMBIOS standard.

BIOS Insyde Corp. 7.11 02/14/2016
Memory:
8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"
OMP_NUM_THREADS = "24"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
runspec command broke through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

icc -m64
icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
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Base Portability Flags (Continued)

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

400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
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Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -D_FILE_OFFSET_BITS=64
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: -D_FILE_OFFSET_BITS=64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch -ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div -par-num-threads=1(pass 1) -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

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Peak Optimization Flags (Continued)

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias

456.hmmer: basepeak = yes

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll14

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -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-32 -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

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-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.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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