SPEC® CINT2006 Result

Huawei

Huawei 5288 V3 (Intel Xeon E5-2643 v3)

SPECint®_rate2006 = 699
SPECint_rate_base2006 = 669

CPU2006 license: 3175
Test date: Aug-2015
Test sponsor: Huawei
Hardware Availability: Sep-2014
Tested by: Huawei
Software Availability: Sep-2014

400.perlbench
401.bzip2
403.gcc
429.mcf
445.gobmk
456.hmmer
458.sjeng
462.libquantum
464.h264ref
471.omnetpp
473.astar
483.xalancbmk

SPECint_rate2006 = 699
SPECint_rate_base2006 = 669

Hardware

CPU Name: Intel Xeon E5-2643 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3400
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
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: 20 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
Auto Parallel: No
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0
Huawei

Huawei 5288 V3 (Intel Xeon E5-2643 v3)

SPEC CINT2006 Result

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

Test date: Aug-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>24</td>
<td>491</td>
<td>488</td>
<td>486</td>
<td>482</td>
<td></td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>24</td>
<td>693</td>
<td>694</td>
<td>695</td>
<td>333</td>
<td></td>
<td></td>
</tr>
<tr>
<td>403.gcc</td>
<td>24</td>
<td>376</td>
<td>513</td>
<td>374</td>
<td>517</td>
<td>371</td>
<td>521</td>
</tr>
<tr>
<td>429.mcf</td>
<td>24</td>
<td>251</td>
<td>253</td>
<td>253</td>
<td>865</td>
<td>273</td>
<td>865</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>24</td>
<td>573</td>
<td>439</td>
<td>573</td>
<td>439</td>
<td>573</td>
<td>439</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>24</td>
<td>224</td>
<td>999</td>
<td>224</td>
<td>999</td>
<td>224</td>
<td>999</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>24</td>
<td>616</td>
<td>617</td>
<td>617</td>
<td>471</td>
<td>617</td>
<td>471</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>24</td>
<td>71.8</td>
<td>6930</td>
<td>71.8</td>
<td>6930</td>
<td>71.8</td>
<td>6930</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>24</td>
<td>675</td>
<td>678</td>
<td>678</td>
<td>783</td>
<td>678</td>
<td>783</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>24</td>
<td>434</td>
<td>433</td>
<td>433</td>
<td>346</td>
<td>415</td>
<td>361</td>
</tr>
<tr>
<td>473.astar</td>
<td>24</td>
<td>438</td>
<td>385</td>
<td>437</td>
<td>386</td>
<td>437</td>
<td>386</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>24</td>
<td>221</td>
<td>749</td>
<td>221</td>
<td>750</td>
<td>221</td>
<td>749</td>
</tr>
</tbody>
</table>

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

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

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Snoop Mode to ES mode
Set Patrol Scrub to Disable
Sysinfo program /spec/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Fri Aug 7 05:07:04 2015

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 E5-2643 v3 @ 3.40GHz
2 "physical id"s (chips)
24 "processors" cores, siblings (Caution: counting these is hw and system dependent. The Continued on next page
Huawei

Huawei 5288 V3 (Intel Xeon E5-2643 v3)

SPECint_rate2006 = 699
SPECint_rate_base2006 = 669

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

Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

- cpu cores : 6
- siblings : 12
- physical 0: cores 0 1 2 3 4 5
- physical 1: cores 0 1 2 3 4 5
- cache size : 20480 KB

From /proc/meminfo
- MemTotal: 263578448 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
- os-release:
  - 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 Aug  7  05:04

SPEC is set to: /spec

Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda1      ext4  385G   95G  271G  26% /

Additional information from dmidecode:

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. 1.36 04/09/2015
Memory:
- 8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz
- 8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
Huawei

Huawei 5288 V3 (Intel Xeon E5-2643 v3)

**SPECint_rate2006 = 699**

**SPECint_rate_base2006 = 669**

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>3175</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor:</td>
<td>Huawei</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Huawei</td>
</tr>
<tr>
<td>Test date:</td>
<td>Aug-2015</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Sep-2014</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Sep-2014</td>
</tr>
</tbody>
</table>

**General Notes**

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 >       /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

**Base Compiler Invocation**

C benchmarks:
icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

C++ benchmarks:
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

**Base Portability Flags**

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

**Base Optimization Flags**

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

**Base Other Flags**

C benchmarks:
403.gcc: -Dalloca=_alloca
Huawei

Huawei 5288 V3 (Intel Xeon E5-2643 v3)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>699</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>669</td>
</tr>
</tbody>
</table>

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

Test date: Aug-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

**Peak Compiler Invocation**

C benchmarks (except as noted below):

```bash
icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

400.perlbench: `icc -m64`
401.bzip2: `icc -m64`
456.hmmer: `icc -m64`
458.sjeng: `icc -m64`

C++ benchmarks:

```bash
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

**Peak Portability Flags**

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
401.bzip2: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

**Peak Optimization Flags**

C benchmarks:

```bash
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) -auto-ilp32
```

401.bzip2: `-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 -auto-ilp32 -ansi-alias`

403.gcc: `-xCORE-AVX2 -ipo -O3 -no-prec-div`
429.mcf: basepeak = yes
445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3`
456.hmmer: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
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 -auto-ilp32`

Continued on next page
Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref:
-xCORE-AVX2(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:
-xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)
-O3(pass 2)  -no-prec-div(pass 2)  -prof-use(pass 2)
-ansi-alias  -opt-ra-region-strategy=block  -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.xml

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Originally published on 25 August 2015.