SPEC® CINT2006 Result

Huawei

Huawei RH5885H V3 (Intel Xeon E7-4830 v4)

SPECint®_rate2006 = Not Run
SPECint_rate_base2006 = 1950

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

Hardware

CPU Name: Intel Xeon E7-4830 v4
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 56 cores, 4 chips, 14 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 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: 35 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)
Disk Subsystem: 2 x 600 GB SAS, 10K RPM
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo) 3.10.0-327.el7.x86_64
Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux
Auto Parallel: No
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.2

Test date: Aug-2016
Hardware Availability: Jun-2016
Software Availability: Oct-2015

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

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Copies

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Results Table

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</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"
Turbo mode set with:
cpupower -c all frequency-set -g performance

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Lock_step to disabled
Baseboard Management Controller used to adjust the fan speed to 100%
Set C-State to C0/C1
Sysinfo program /home/spec2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $e3fbb8667b5a285932ceab8e28219e1

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 E7-4830 v4 @ 2.00GHz
Continued on next page
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Platform Notes (Continued)

4 "physical id"s (chips)
112 "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 : 14
siblings : 28
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
cache size : 17920 KB

From /proc/meminfo
MemTotal: 528072544 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

uname -a:
Linux RH5885hv3 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 10 05:12

SPEC is set to: /home/spec2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-root xfs 525G 15G 510G 3% /

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 American Megatrends Inc. 5.11 02/05/2016
Memory:
32x Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1333 MHz
64x NO DIMM NO DIMM
## SPEC CINT2006 Result

### Huawei

**Huawei RH5885H V3 (Intel Xeon E7-4830 v4)**

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### Platform Notes (Continued)

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 256 GB and the dmidecode description should have two lines reading as:

- 32x Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1333 MHz
- 64x NO DIMM NO DIMM

### General Notes

Environment variables set by runspec before the start of the run:

- **LD_LIBRARY_PATH** = "/home/spec2006/libs/32:/home/spec2006/libs/64:/home/spec2006/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

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`

runcspec command invoked through numactl i.e.:

- `numactl --interleave=all runspec <etc>`

### Base Compiler Invocation

**C benchmarks:**

- `icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

**C++ benchmarks:**

- `icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

### Base Portability Flags

- `400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32`
- `401.bzip2: -D_FILE_OFFSET_BITS=64`
- `403.gcc: -D_FILE_OFFSET_BITS=64`
- `429.mcf: -D_FILE_OFFSET_BITS=64`
- `445.gobmk: -D_FILE_OFFSET_BITS=64`
- `456.hmmer: -D_FILE_OFFSET_BITS=64`
- `458.sjeng: -D_FILE_OFFSET_BITS=64`
- `462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`
- `464.h264ref: -D_FILE_OFFSET_BITS=64`
- `471.omnetpp: -D_FILE_OFFSET_BITS=64`
- `473.astar: -D_FILE_OFFSET_BITS=64`
- `483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`
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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

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

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-V1.2-BDW-RevG.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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