SPEC® CINT2006 Result

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Huawei

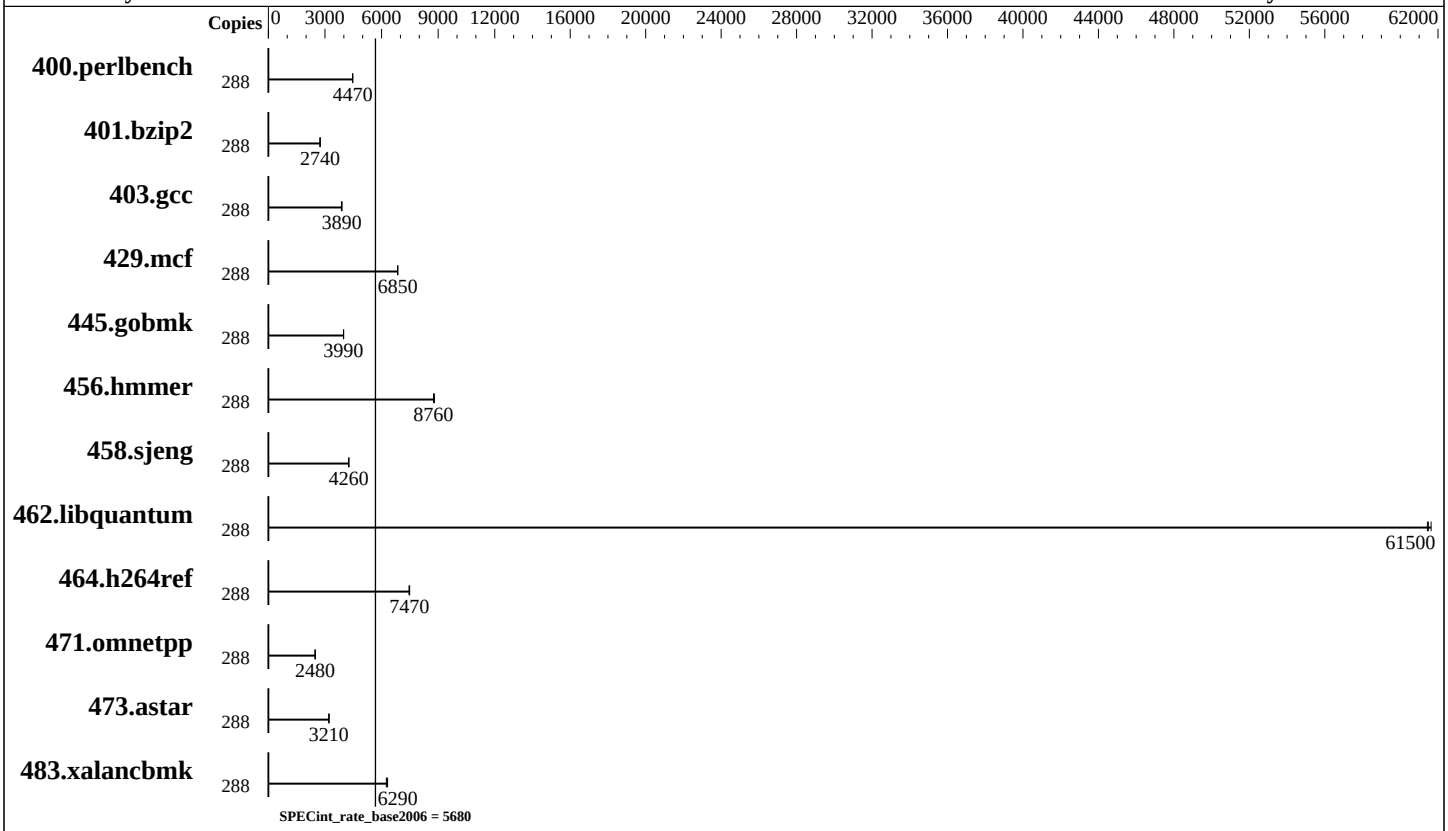
Huawei RH8100 V3 (Intel Xeon E7-8867 v4)

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 5680

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

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



Hardware

CPU Name:	Intel Xeon E7-8867 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	144 cores, 8 chips, 18 cores/chip, 2 threads/core
CPU(s) orderable:	4,6,8 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:	45 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem:	2 x 600GB 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

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	288	**629**	**4470**	629	4470	630	4460							
401.bzip2	288	1015	2740	1013	2740	**1014**	**2740**							
403.gcc	288	**597**	**3890**	594	3900	599	3870							
429.mcf	288	383	6860	384	6850	**383**	**6850**							
445.gobmk	288	758	3980	758	3990	**758**	**3990**							
456.hmmer	288	307	8760	**307**	**8760**	305	8800							
458.sjeng	288	817	4270	819	4260	**818**	**4260**							
462.libquantum	288	96.8	61600	**97.0**	**61500**	97.1	61400							
464.h264ref	288	**853**	**7470**	855	7460	851	7490							
471.omnetpp	288	726	2480	726	2480	**726**	**2480**							
473.astar	288	**630**	**3210**	631	3200	629	3210							
483.xalancbmk	288	318	6250	**316**	**6290**	314	6320							

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/spec/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on RH8100v3 Thu Aug 11 10:13:10 2016

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 E7-8867 v4 @ 2.40GHz
```

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Platform Notes (Continued)

```
      8 "physical id"s (chips)
      288 "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 : 18
      siblings  : 36
      physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 4: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 5: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 6: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 7: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
   cache size : 46080 KB

From /proc/meminfo
   MemTotal:       1056491112 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)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server

uname -a:
   Linux RH8100v3 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 11 10:10

SPEC is set to: /home/spec
   Filesystem            Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   978G  8.0G  970G   1% /home
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.
```

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Platform Notes (Continued)

```
    BIOS American Megatrends Inc. 5.11 02/05/2016
    Memory:
     64x Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1600 MHz
     128x NO DIMM NO DIMM

  (End of data from sysinfo program)
  Regarding the sysinfo display about the memory installed, the correct amount of
  memory is 1024 GB and the dmidecode description should have two lines reading as:
   64x Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1600 MHz
   128x NO DIMM NO DIMM
```

General Notes

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

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Base Portability Flags (Continued)

483.xalancbmk: `-D_FILE_OFFSET_BITS=64 -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`

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-V1.2-BDW-RevG.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 other inquiries, please contact webmaster@spec.org.

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