SPEC® CINT2006 Result

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Huawei

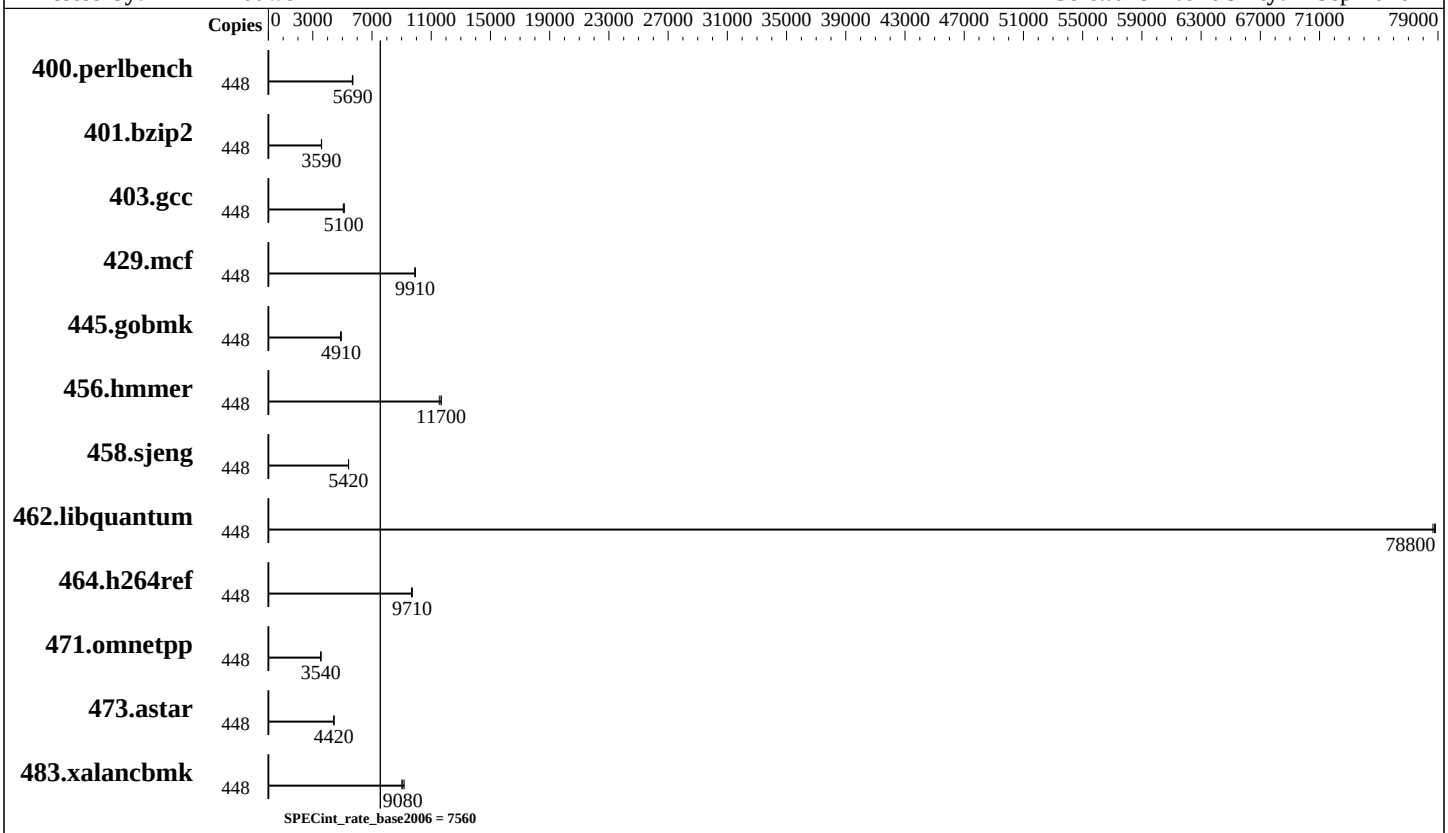
Kunlun 9016 (Intel Xeon E7-4830 v4)

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 7560

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

Test date: May-2017
Hardware Availability: Jan-2016
Software Availability: Sep-2016



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:	224 cores, 16 chips, 14 cores/chip, 2 threads/core
CPU(s) orderable:	4,8,16 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:	35 MB I+D on chip per chip
Other Cache:	None
Memory:	2 TB (128 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:	SUSE Linux Enterprise Server 12 (x86_64) SP1 3.12.49-11-default
Compiler:	C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 5 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.2

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	448	772	5670	768	5700	**769**	**5690**							
401.bzip2	448	1206	3580	1203	3590	**1205**	**3590**							
403.gcc	448	713	5060	**707**	**5100**	703	5130							
429.mcf	448	413	9890	411	9940	**412**	**9910**							
445.gobmk	448	965	4870	**958**	**4910**	956	4920							
456.hmmer	448	362	11500	358	11700	**358**	**11700**							
458.sjeng	448	1001	5420	**1001**	**5420**	1002	5410							
462.libquantum	448	118	78800	118	78700	**118**	**78800**							
464.h264ref	448	1021	9710	**1022**	**9710**	1026	9670							
471.omnetpp	448	**790**	**3540**	791	3540	790	3550							
473.astar	448	**711**	**4420**	711	4420	710	4430							
483.xalancbmk	448	337	9170	**340**	**9080**	343	9010							

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
Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-ew80 Thu May 11 08:48:27 2017

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
      16 "physical id"s (chips)
      448 "processors"
```

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Platform Notes (Continued)

```
      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
         physical 4: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 5: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 6: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 7: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 8: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 9: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 10: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 11: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 12: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 13: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 14: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
         physical 15: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      cache size : 35840 KB

   From /proc/meminfo
      MemTotal:       2117105068 kB
      HugePages_Total:   153600
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      SUSE Linux Enterprise Server 12 SP1

   From /etc/*release* /etc/*version*
      SuSE-release:
         SUSE Linux Enterprise Server 12 (x86_64)
         VERSION = 12
         PATCHLEVEL = 1
         # This file is deprecated and will be removed in a future service pack or
         release.
         # Please check /etc/os-release for details about this release.
      os-release:
         NAME="SLES"
         VERSION="12-SP1"
         VERSION_ID="12.1"
         PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
         ID="sles"
         ANSI_COLOR="0;32"
         CPE_NAME="cpe:/o:suse:sles:12:sp1"

   uname -a:
      Linux linux-ew80 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
      (8d714a0) x86_64 x86_64 x86_64 GNU/Linux
```

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Platform Notes (Continued)

```
 run-level 5 May 11 07:58

 SPEC is set to: /spec
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda3      ext4  1.1T   95G  961G   9% /
 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. BLXSV207 04/17/2017
   Memory:
    128x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1333 MHz
    256x NO DIMM NO DIMM

 (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh10.2"

 Binaries compiled on a system with 1x Intel Core i7-4790K CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.2
 Transparent Huge Pages enabled by default
 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_2017/linux/lib/ia32
```

C++ benchmarks:

```
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

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`

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Base Portability Flags (Continued)

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

Base Optimization Flags

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

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -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-ic17.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.2-BDW-RevG.20170404.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.2-BDW-RevG.20170404.xml

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