SPEC® CINT2006 Result
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Huawei

Kunlun 9016(Intel Xeon E7-4850 v4)

$SPECint®\_rate2006 =$ Not Run

$SPECint\_rate\_base2006 =$ 8970

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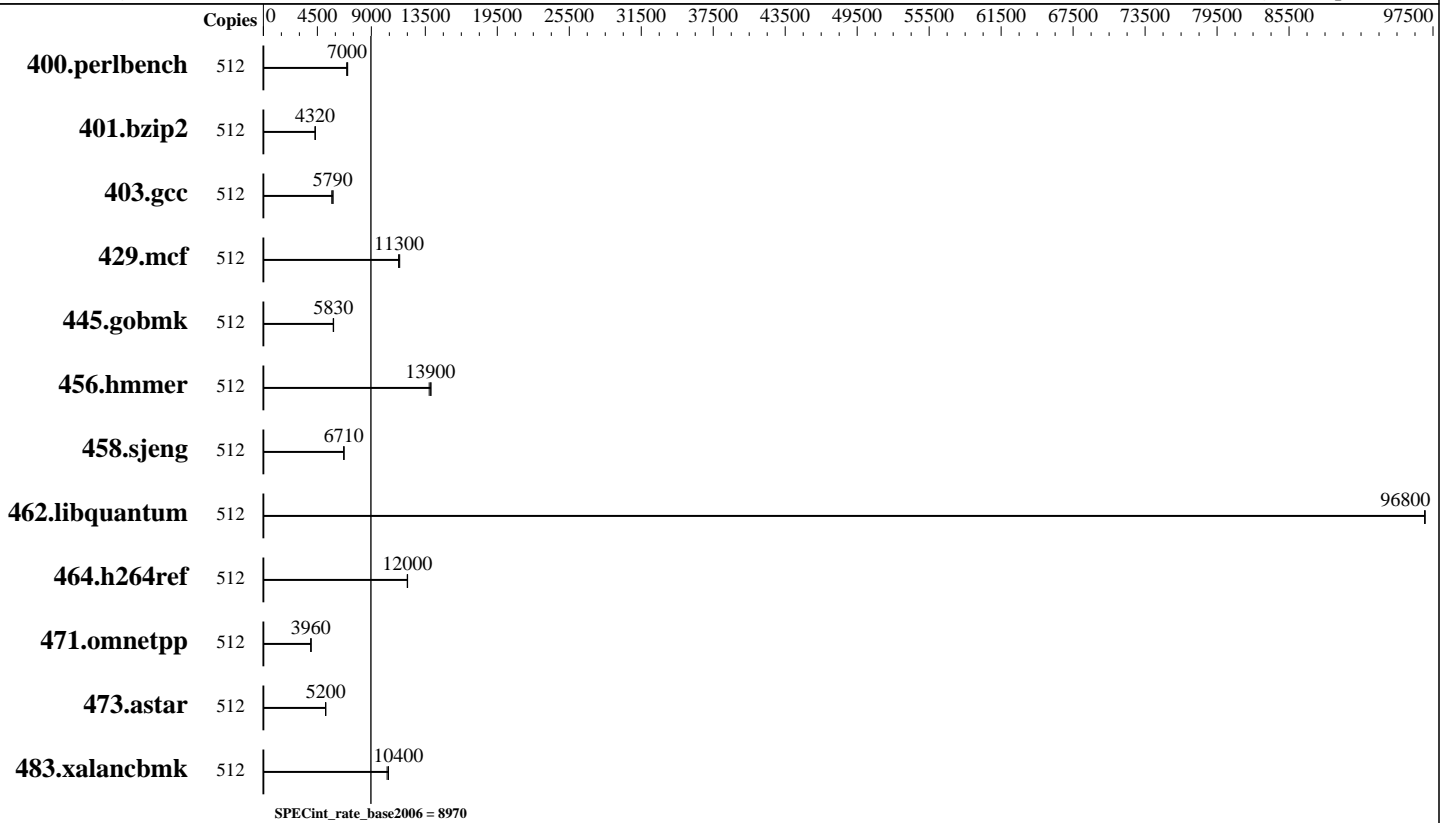**Test sponsor:** Huawei
Tested by: Huawei

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

Benchmark	Copies	Result
400.perlbench	512	7000
401.bzip2	512	4320
403.gcc	512	5790
429.mcf	512	11300
445.gobmk	512	5830
456.hmmer	512	13900
458.sjeng	512	6710
462.libquantum	512	96800
464.h264ref	512	12000
471.omnetpp	512	3960
473.astar	512	5200
483.xalancbmk	512	10400

SPECint_rate_base2006 = 8970

Hardware

CPU Name: Intel Xeon E7-4850 v4
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2100
FPU: Integrated
CPU(s) enabled: 256 cores, 16 chips, 16 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: 40 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

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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	512	**715**	**7000**	712	7030	720	6950							
401.bzip2	512	1145	4320	**1145**	**4320**	1140	4330							
403.gcc	512	711	5800	723	5700	**712**	**5790**							
429.mcf	512	**413**	**11300**	411	11400	414	11300							
445.gobmk	512	**921**	**5830**	917	5850	921	5830							
456.hmmer	512	342	14000	346	13800	**343**	**13900**							
458.sjeng	512	923	6710	**923**	**6710**	923	6710							
462.libquantum	512	110	96800	**110**	**96800**	110	96800							
464.h264ref	512	945	12000	**943**	**12000**	942	12000							
471.omnetpp	512	806	3970	**807**	**3960**	808	3960							
473.astar	512	**691**	**5200**	694	5180	691	5200							
483.xalancbmk	512	**339**	**10400**	339	10400	343	10300							

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 Mon May 15 07:47:57 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 E7-4850 v4 @ 2.10GHz
      16 "physical id"s (chips)
      512 "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 : 16
       siblings  : 32
       physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 4: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 5: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 6: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 7: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 8: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 9: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 10: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 11: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 12: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 13: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 14: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 15: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
    cache size : 40960 KB

  From /proc/meminfo
     MemTotal:       2117104300 kB
     HugePages_Total:        0
     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 15 07:44

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

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

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