SPEC® CINT2006 Result
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Huawei

Kunlun 9016(Intel Xeon E7-8880 v4)

$SPECint^{®}_rate2006 = $ Not Run

$SPECint_rate_base2006 = $ 12400
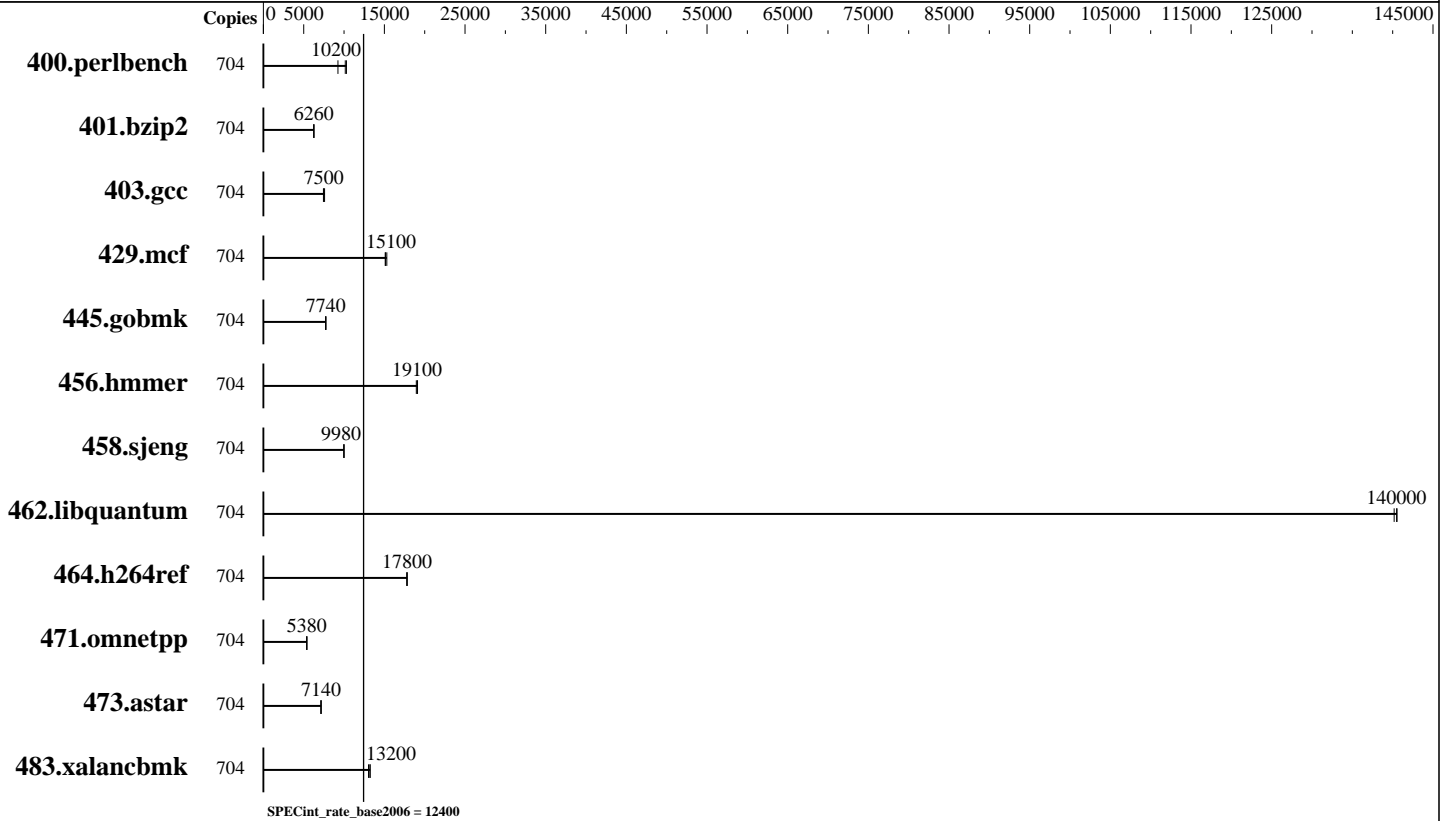
CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

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

Copies	Benchmark	Result
400.perlbench	704	10200
401.bzip2	704	6260
403.gcc	704	7500
429.mcf	704	15100
445.gobmk	704	7740
456.hmmer	704	19100
458.sjeng	704	9980
462.libquantum	704	140000
464.h264ref	704	17800
471.omnetpp	704	5380
473.astar	704	7140
483.xalancbmk	704	13200

SPECint_rate_base2006 = 12400

Hardware

CPU Name: Intel Xeon E7-8880 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 352 cores, 16 chips, 22 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: 55 MB I+D on chip per chip
Other Cache: None
Memory: 2 TB (128 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 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	704	744	9240	668	10300	**678**	**10200**							
401.bzip2	704	**1086**	**6260**	1085	6260	1087	6250							
403.gcc	704	747	7590	**755**	**7500**	761	7440							
429.mcf	704	**424**	**15100**	420	15300	425	15100							
445.gobmk	704	**954**	**7740**	957	7720	953	7750							
456.hmmer	704	346	19000	**344**	**19100**	344	19100							
458.sjeng	704	**853**	**9980**	853	9990	853	9980							
462.libquantum	704	104	140000	**104**	**140000**	104	141000							
464.h264ref	704	876	17800	874	17800	**875**	**17800**							
471.omnetpp	704	817	5390	818	5380	**817**	**5380**							
473.astar	704	690	7160	**692**	**7140**	692	7140							
483.xalancbmk	704	**368**	**13200**	373	13000	367	13200							

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
Sysinfo program /spec/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-ew80 Wed May 10 05:36:20 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 E7-8880 v4 @ 2.20GHz
      16 "physical id"s (chips)
      704 "processors"
   cores, siblings (Caution: counting these is hw and system dependent. The

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Platform Notes (Continued)

```
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 22
       siblings  : 44
       physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 4: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 5: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 6: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 7: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 8: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 9: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 10: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 11: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 12: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 13: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 14: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
       physical 15: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27
       28
    cache size : 56320 KB

  From /proc/meminfo
     MemTotal:       2117101972 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
```

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Platform Notes (Continued)

```
        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

  run-level 5 May 10 05:35

  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 1600 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>
```

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

Tested with SPEC CPU2006 v1.2.
Report generated on Mon Oct 9 12:04:15 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 October 2017.