SPEC® CINT2006 Result

Fujitsu

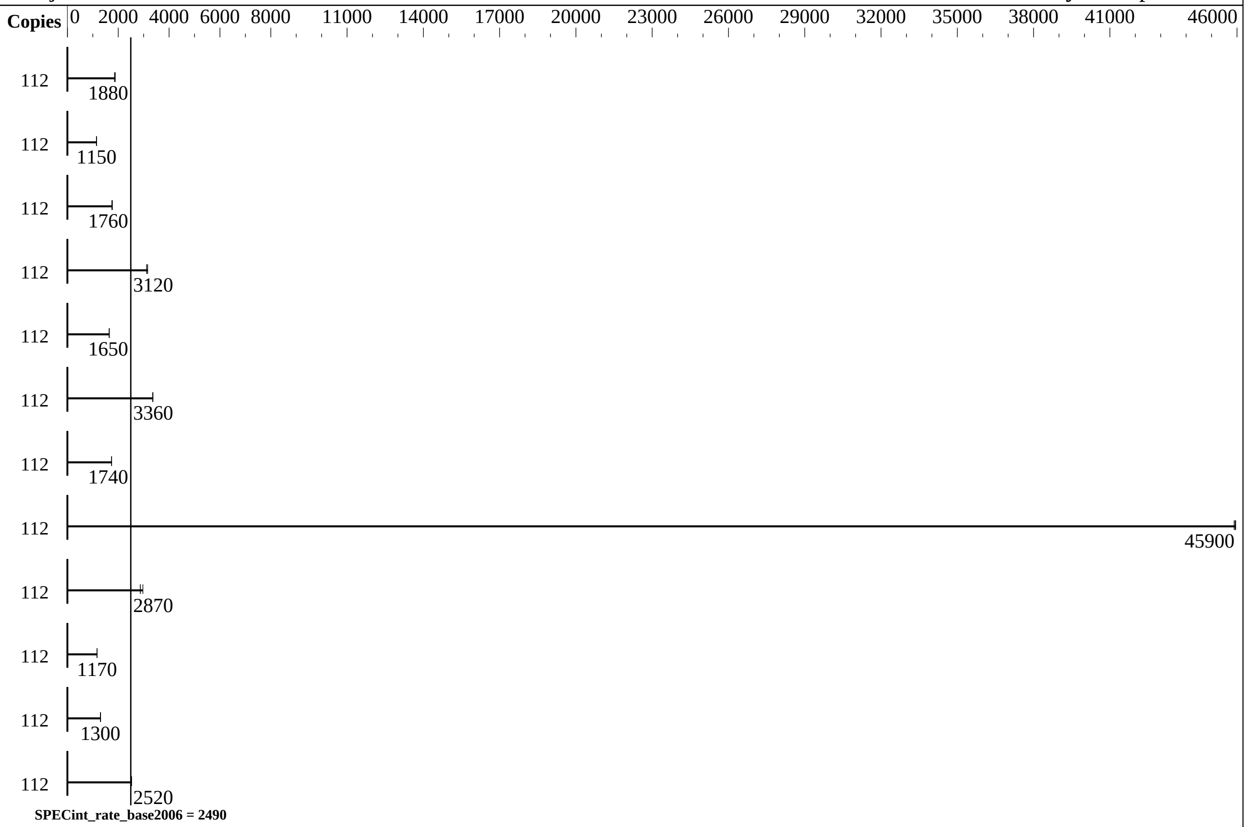
PRIMERGY CX2550 M4, Intel Xeon Platinum 8176M, 2.10GHz

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 2490

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Dec-2017
Hardware Availability: Dec-2017
Software Availability: Sep-2017



Hardware

CPU Name:	Intel Xeon Platinum 8176M
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	2100
FPU:	Integrated
CPU(s) enabled:	56 cores, 2 chips, 28 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	38.5 MB I+D on chip per chip
Other Cache:	None
Memory:	192 GB (12 x 16 GB 2Rx4 PC4-2666V-R)
Disk Subsystem:	1 x SATA M.2 SSD, 128 GB
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 12 SP2 4.4.21-69-default
Compiler:	C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux
Auto Parallel:	No
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	Not Applicable
Other Software:	Microquill SmartHeap V10.2

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Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	112	**582**	**1880**	591	1850	581	1880							
401.bzip2	112	942	1150	939	1150	**941**	**1150**							
403.gcc	112	509	1770	515	1750	**512**	**1760**							
429.mcf	112	323	3160	**327**	**3120**	328	3120							
445.gobmk	112	712	1650	716	1640	**714**	**1650**							
456.hmmer	112	311	3360	**311**	**3360**	312	3350							
458.sjeng	112	779	1740	**778**	**1740**	778	1740							
462.libquantum	112	50.6	45900	**50.5**	**45900**	50.5	45900							
464.h264ref	112	**864**	**2870**	835	2970	865	2870							
471.omnetpp	112	598	1170	598	1170	**598**	**1170**							
473.astar	112	**604**	**1300**	605	1300	604	1300							
483.xalancbmk	112	**306**	**2520**	306	2530	306	2520							

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"
Set Kernel Boot Parameter: nohz_full=1-111
Set CPU frequency governor to maximum performance with:
cpupower -c all frequency-set -g performance
Process tuning settings:
echo 10000000 > /proc/sys/kernel/sched_min_granularity_ns
echo 15000000 > /proc/sys/kernel/sched_wakeup_granularity_ns
echo 0 > /proc/sys/kernel/numa_balancing
cpu idle state set with:
cpupower idle-set -d 1
cpupower idle-set -d 2
```

Platform Notes

```
BIOS configuration:
DCU Streamer Prefetcher = Disabled
Intel Virtualization Technology = Disabled
Power Technology = Custom
HWPM Support = Disabled
UPI Link Frequency Select = 10.4GT/s
Sub NUMA Clustering = Enabled
```

Continued on next page

Platform Notes (Continued)

```
Stale AtoS = Enabled
LLC dead line alloc = Disabled
Sysinfo program /home/Benchmark/speccpu-icc18-20171020/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on CX2550M4 Fri Dec  1 18:51:19 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) Platinum 8176M CPU @ 2.10GHz
      2 "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 : 28
      siblings  : 56
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
   cache size : 39424 KB

From /proc/meminfo
   MemTotal:       196604044 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   SUSE Linux Enterprise Server 12 SP2

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 2
      # 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-SP2"
      VERSION_ID="12.2"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
   Linux CX2550M4 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
```

Continued on next page

Platform Notes (Continued)

```
      (9464f67) x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Dec 1 17:50

   SPEC is set to: /home/Benchmark/speccpu-icc18-20171020
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/sda5      xfs    77G   14G   64G  18% /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.

     BIOS FUJITSU V1.0.0.0 R1.9.6 for D3853-A1x             10/06/2017
     Memory:
      12x Hynix HMA42GR7BJR4N-VK 16 GB 2 rank 2666 MHz
      4x Not Specified Not Specified

   (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/home/Benchmark/speccpu-icc18-20171020/icc2018lib/ia32:/home/Benchmark/speccpu-icc18-20171020/icc2018lib/intel64"
 LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu-icc18-20171020/sh10.2"

  Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
  memory using Redhat Enterprise Linux 7.2
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/transparent_hugepage/enabled
  Filesystem page cache cleared with:
  shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
  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_2018.0.128/linux/compiler/lib/ia32
```

C++ benchmarks:

```
icpc -m32 -L/opt/intel/compilers_and_libraries_2018.0.128/linux/compiler/lib/ia32
```

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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-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX512 -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-revF.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-SKL-RevD.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-revF.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-SKL-RevD.xml

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

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