## SPEC® CINT2006 Result

**Fujitsu**

**PRIMERGY RX4770 M4, Intel Xeon Platinum 8180, 2.50GHz**

**SPECint\_rate2006 = Not Run**

**SPECint\_rate\_base2006 = 5490**

<table>
<thead>
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<th>19</th>
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<td>Tested by:</td>
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<td>401.bzip2</td>
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<td>483.xalancbmk</td>
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</table>

**Hardware**

- CPU Name: Intel Xeon Platinum 8180
- CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
- CPU MHz: 2500
- FPU: Integrated
- CPU(s) enabled: 112 cores, 4 chips, 28 cores/chip, 2 threads/core
- CPU(s) orderable: 2,4 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: 768 GB (48 x 16 GB 2Rx4 PC4-2666V-R)
- Disk Subsystem: 768 GB tmpfs
- Other Hardware: 1 x SAS HDD, 1.2 TB, 10500 RPM, used for swap

**Software**

- Operating System: SUSE Linux Enterprise Server 12 SP2 4.4.21-69-default
- Compiler: C/C++: Version 18.0.1.163 of Intel C/C++ Compiler for Linux
- Auto Parallel: No
- File System: tmpfs
- 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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http://www.spec.org/
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## Results Table

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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=1-223  
Set CPU frequency governor to maximum performance with:  
cpuset -c all frequency-set -g performance  
Set tmpfs filesystem with:  
mkdir /home/memory  
mount -t tmpfs -o size=768g,rw tmpfs /home/memory  
Process tuning settings:  
echo 100000000 > /proc/sys/kernel/sched_min_granularity_ns  
echo 15000000 > /proc/sys/kernel/sched_wakeup_granularity_ns  
cpu idle state set with:  
cpuset idle-set -d 1  
cpuset idle-set -d 2

## Platform Notes

BIOS configuration:  
DCU Streamer Prefetcher = Disabled  
Intel Virtualization Technology = Disabled  
HWPM Support = Disabled  
Package C State limit = C0

Continued on next page
Fujitsu
PRIMERGY RX4770 M4, Intel Xeon Platinum 8180, 2.50GHz

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Platform Notes (Continued)

Link Frequency Select = 10.4 GT/s
LLC Dead Line Alloc = Disabled
Stale AtoS = Enabled
Patrol Scrub = Disabled
IMC Interleaving = 1-way
Fan Control = Full
Sysinfo program /home/memory/speccpu/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
runtime on RX4770M4 Sun Dec 24 23:50:19 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 8180 CPU @ 2.50GHz
  4 "physical id"s (chips)
  224 "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
  physical 2: 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 3: 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:       790723412 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"

Continued on next page
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SPEC CINT2006 Result
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2.50GHz
PRIMERGY RX4770 M4, Intel Xeon Platinum 8180,

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Platform Notes (Continued)

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 RX4770M4 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
(9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 24 23:32

SPEC is set to: /home/memory/speccpu

filesystem type size used avail use% mounted on
tmpfs tmpfs 768G 5.3G 763G 1% /home/memory

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 // American Megatrends Inc. V5.0.0.12 R1.5.0 for D3753-A1x
12/07/2017
Memory:
48x Samsung M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/memory/speccpu/icc18.1lib/ia32:/home/memory/speccpu/icc18.1lib/intel64:/home/memory/speccpu/sh10.2"

Binaries compiled on a system with 2x Intel Xeon Platinum 8180 CPU + 768GB RAM
memory using SUSE Linux Enterprise Server 12 SP2
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 numaclt i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:

icc -m32 -L/opt/intel/compilers_and_libraries_2018.1.163/linux/compiler/lib/ia32

Continued on next page
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Base Compiler Invocation (Continued)

C++ benchmarks:
   icpc -m32 -L/opt/intel/compilers_and_libraries_2018.1.163/linux/compiler/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-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
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