Fujitsu
PRIMERGY RX2530 M4, Intel Xeon Silver 4110, 2.10GHz

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 711

Test date: Aug-2017
Hardware Availability: Jul-2017
Software Availability: Apr-2017

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

400.perlbench 32 | 924 | SPECint_rate_base2006 = 711
401.bzip2 32 | 1040 | 531
403.gcc 32 | 1070 | 313
429.mcf 32 | 466 | 1040
445.gobmk 32 | 433 | 1070
456.hmmer 32 | 466 | 313
458.sjeng 32 | 433 | 1040
462.libquantum 32 | 466 | 1070
464.h264ref 32 | 433 | 313
471.omnetpp 32 | 466 | 1040
473.astar 32 | 433 | 1070
483.xalancbmk 32 | 466 | 313

Hardware
CPU Name: Intel Xeon Silver 4110
CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
CPU MHZ: 2100
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 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: 11 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (24 x 16 GB 2Rx4 PC4-2666V-R, running at 2400 MHz)
Disk Subsystem: 752 GB tmpfs
Other Hardware: None

Software
Operating System: SUSE Linux Enterprise Server 12 SP2
Compiler: C/C++: Version 17.0.3.191 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
SPEC CINT2006 Result

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Results Table

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</tbody>
</table>

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"
Kernel Boot Parameter set with : nohz_full=1-31
Turbo mode set with :
cpupower -c all frequency-set -g performance
Tmpfs filesystem can be set with:
mkdir /home/memory
mount -t tmpfs -o size=752g, rw tmpfs /home/memory
Process tunning setting:
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:
HWPM Support = Disabled
Intel Virtualization Technology = Disabled
Sub NUMA Clustering = Disabled

Continued on next page
**SPEC CINT2006 Result**  
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**Fujitsu**  
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### SPECint_rate2006 = Not Run  
**SPECint_rate_base2006 = 711**

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**Platform Notes (Continued)**

IMC Interleaving = 2-way  
LLC Dead Line Alloc = Disabled  
Stale AtoS = Enabled  
Sysinfo program /home/memory/SPECCpu/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
runtime on linux-vv4c Tue Aug 8 02:56:42 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) Silver 4110 CPU @ 2.10GHz  
2 "physical id"s (chips)  
32 "processors"  
core, siblings (Caution: counting these is hw and system dependent. The following excerpts from `/proc/cpuinfo` might not be reliable. Use with caution.)  
cpu cores : 8  
siblings : 16  
physical 0: cores 0 1 2 3 4 5 6 7  
physical 1: cores 0 1 2 3 4 5 6 7  
cache size : 11264 KB

From `/proc/meminfo`  
MemTotal: 394412792 kB  
HugePages_Total: 0  
Hugepagesize: 2048 kB

```
From /etc/*release* /etc/*version*
SuSE-release:  
SUSE Linux Enterprise Server 12 SP2
```

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**Continued on next page**
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Platform Notes (Continued)

run-level 3 Aug 7 19:44

SPEC is set to: /home/memory/SPECcpu
Filesystem     Type   Size  Used Avail Use% Mounted on
tmpfs          tmpfs  752G  4.6G  748G   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 R1.4.1 for D3383-A1x 06/19/2017
Memory:
24x Samsung M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz, configured at 2400 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/lib/ia32:/home/memory/SPECcpu/lib/intel64:/home/memory/SPECcpu/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.:
umactl --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

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Base Portability Flags (Continued)

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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-revF.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-SKL-RevA.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-RevA.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.
Originally published on 20 September 2017.