Fujitsu
PRIMERGY RX2530 M4, Intel Xeon Gold 5118, 2.30GHz

SPECI\textsuperscript{nt}_\textsubscript{rate2006} = Not Run
SPECI\textsubscript{nt}_{\textsubscript{rate\_base2006}} = 1160

Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 5118</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
</tr>
<tr>
<td>CPU MHZ</td>
<td>2300</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>24 cores, 2 chips, 12 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 chips</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>16.5 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>384 GB (24 x 16 GB 2Rx4 PC4-2666V-R, running at 2400 MHz)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>752 GB tmpfs</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 12 SP2</td>
</tr>
<tr>
<td></td>
<td>4.4.21-69-default</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>tmpfs</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Other Software</td>
<td>Microquill SmartHeap V10.2</td>
</tr>
</tbody>
</table>
SPEC CINT2006 Result

Fujitsu
PRIMERGY RX2530 M4, Intel Xeon Gold 5118, 2.30GHz

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 1160

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

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base</td>
<td></td>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400.perlbench</td>
<td>48</td>
<td>549</td>
<td>854</td>
<td>552</td>
<td>849</td>
<td>550</td>
<td>853</td>
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<td>401.bzip2</td>
<td>48</td>
<td>914</td>
<td>507</td>
<td>893</td>
<td>519</td>
<td>899</td>
<td>515</td>
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<tr>
<td>403.gcc</td>
<td>48</td>
<td>451</td>
<td>856</td>
<td>453</td>
<td>853</td>
<td>454</td>
<td>850</td>
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<tr>
<td>429.mcf</td>
<td>48</td>
<td>257</td>
<td>1710</td>
<td>254</td>
<td>1720</td>
<td>255</td>
<td>1720</td>
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<tr>
<td>445.gobmk</td>
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<td>728</td>
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<td>727</td>
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<tr>
<td>456.hmmer</td>
<td>48</td>
<td>257</td>
<td>1750</td>
<td>259</td>
<td>1730</td>
<td>259</td>
<td>1730</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>48</td>
<td>741</td>
<td>784</td>
<td>741</td>
<td>784</td>
<td>741</td>
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<tr>
<td>462.libquantum</td>
<td>48</td>
<td>84.5</td>
<td>11800</td>
<td>84.4</td>
<td>11800</td>
<td>84.1</td>
<td>11800</td>
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<tr>
<td>464.h264ref</td>
<td>48</td>
<td>793</td>
<td>1340</td>
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<td>1330</td>
<td>796</td>
<td>1330</td>
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<td>471.omnetpp</td>
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<td>487</td>
<td>616</td>
<td>488</td>
<td>615</td>
<td>485</td>
<td>618</td>
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<tr>
<td>473.astar</td>
<td>48</td>
<td>504</td>
<td>668</td>
<td>504</td>
<td>669</td>
<td>506</td>
<td>666</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>48</td>
<td>227</td>
<td>1460</td>
<td>227</td>
<td>1460</td>
<td>228</td>
<td>1450</td>
</tr>
</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 numacl 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=1-47
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 1000000000 > /proc/sys/kernel/sched_min_granularity_ns
echo 1500000000 > /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:
Link Frequency Select = 10.4 GT/s
HWPM Support = Disabled
Intel Virtualization Technology = Disabled
Fujitsu
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CPU2006 license: 19
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Platform Notes (Continued)

Sub NUMA Clustering = Disabled
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-zz9i Thu Aug 10 01:34:45 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) Gold 5118 CPU @ 2.30GHz
 2 "physical id"s (chips)
 48 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
  cpu cores : 12
  siblings : 24
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
  cache size : 16896 KB

From /proc/meminfo
MemTotal: 394407124 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 linux-zz9i 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016

Continued on next page
SPEC CINT2006 Result

Fujitsu
PRIMERGY RX2530 M4, Intel Xeon Gold 5118, 2.30GHz

| SPECint_rate2006 = | Not Run |
| SPECint_rate_base2006 = | 1160 |

CPU2006 license: 19
Test sponsor: Fujitsu
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Test date: Aug-2017
Hardware Availability: Jul-2017
Software Availability: Apr-2017

Platform Notes (Continued)

(9464f67) x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Aug 9 08:35
SPEC is set to: /home/memory/speccpu
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 752G 4.1G 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 Hynix HMA42GR7BJR4N-VK 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

Continued on next page
SPEC CINT2006 Result

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Base Portability Flags (Continued)

```
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-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
# Fujitsu

**PRIMERGY RX2530 M4, Intel Xeon Gold 5118, 2.30GHz**

<table>
<thead>
<tr>
<th>SPECint_rate2006 =</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006 =</td>
<td>1160</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 19  
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For questions about this result, please contact the tester.  
For other inquiries, please contact webmaster@spec.org.

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