**SPEC® CINT2006 Result**

**Fujitsu**

PRIMERGY TX1330 M3, Intel Xeon E3-1220 v6, 3.0 GHz

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>= Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>= 200</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 19  
**Test date:** Oct-2017  
**Test sponsor:** Fujitsu  
**Hardware Availability:** May-2017  
**Tested by:** Fujitsu  
**Software Availability:** Nov-2016

<table>
<thead>
<tr>
<th>SPECint_rate_base2006</th>
<th>= 200</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>runtime</th>
<th>Copy Count</th>
<th>rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>4</td>
<td>155</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>4</td>
<td>89.5</td>
</tr>
<tr>
<td>403.gcc</td>
<td>4</td>
<td>154</td>
</tr>
<tr>
<td>429.mcf</td>
<td>4</td>
<td>269</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>4</td>
<td>115</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>4</td>
<td>311</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>4</td>
<td>127</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>4</td>
<td>2020</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>4</td>
<td>260</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>4</td>
<td>99.9</td>
</tr>
<tr>
<td>473.astar</td>
<td>4</td>
<td>109</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>4</td>
<td>269</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Operating System</th>
<th>SUSE Linux Enterprise Server 12 SP2 4.4.21-69-default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler</td>
<td>C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>xfs</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>

**Hardware**

<table>
<thead>
<tr>
<th>CPU Name</th>
<th>Intel Xeon E3-1220 v6</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.50 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>3000</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>4 cores, 1 chip, 4 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1 chip</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>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>8 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>64 GB (4 x 16 GB 2Rx8 PC4-2400T-E)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x SATA, 500 GB, 7200RPM</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>
## Fujitsu

PRIMERGY TX1330 M3, Intel Xeon E3-1220 v6, 3.0 GHz

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

### SPEC CINT2006 Result

**SPECint_rate2006 = Not Run**  
**SPECint_rate_base2006 = 200**

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>4</td>
<td>252</td>
<td>155</td>
<td>252</td>
<td>155</td>
<td></td>
<td></td>
<td>251</td>
<td>156</td>
</tr>
<tr>
<td>bzip2</td>
<td>4</td>
<td>431</td>
<td>89.5</td>
<td>430</td>
<td>89.7</td>
<td></td>
<td></td>
<td>431</td>
<td>89.5</td>
</tr>
<tr>
<td>gcc</td>
<td>4</td>
<td>209</td>
<td>154</td>
<td>215</td>
<td>150</td>
<td></td>
<td></td>
<td>209</td>
<td>154</td>
</tr>
<tr>
<td>mcf</td>
<td>4</td>
<td>366</td>
<td>115</td>
<td>366</td>
<td>115</td>
<td></td>
<td></td>
<td>366</td>
<td>115</td>
</tr>
<tr>
<td>gobmk</td>
<td>4</td>
<td>380</td>
<td>127</td>
<td>380</td>
<td>127</td>
<td></td>
<td></td>
<td>380</td>
<td>127</td>
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<tr>
<td>hammer</td>
<td>4</td>
<td>410</td>
<td>2020</td>
<td>410</td>
<td>2020</td>
<td></td>
<td></td>
<td>412</td>
<td>2010</td>
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<tr>
<td>h264ref</td>
<td>4</td>
<td>339</td>
<td>261</td>
<td>341</td>
<td>260</td>
<td></td>
<td></td>
<td>340</td>
<td>260</td>
</tr>
<tr>
<td>omnetpp</td>
<td>4</td>
<td>250</td>
<td>100</td>
<td>250</td>
<td>99.9</td>
<td></td>
<td></td>
<td>252</td>
<td>99.4</td>
</tr>
<tr>
<td>astar</td>
<td>4</td>
<td>257</td>
<td>109</td>
<td>257</td>
<td>109</td>
<td></td>
<td></td>
<td>257</td>
<td>109</td>
</tr>
<tr>
<td>xalancbmk</td>
<td>4</td>
<td>103</td>
<td>269</td>
<td>103</td>
<td>269</td>
<td></td>
<td></td>
<td>103</td>
<td>269</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 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 CPU frequency governor to maximum performance with:

cpuset -c all frequency-set -g performance

cpu idle state set with:

cpuset idle-set -d 2
cpuset idle-set -d 3

Process tuning settings:

echo always > /sys/kernel/mm/transparent_hugepage/enabled
echo 1 > /proc/sys/vm/drop_caches
echo 1000000000 > /proc/sys/kernel/sched_min_granularity_ns

### Platform Notes

Sysinfo program /home/Benchmark/speccpu2006-bin0922/config/sysinfo.rev6993

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)

running on linux-n511 Fri Oct 20 12:22:06 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

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

Test date: Oct-2017
Hardware Availability: May-2017
Software Availability: Nov-2016

Platform Notes (Continued)

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E3-1220 v6 @ 3.00GHz
  1 "physical id"s (chips)
  4 "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 : 4
  siblings : 4
  physical 0: cores 0 1 2 3
  cache size : 8192 KB

From /proc/meminfo
  MemTotal: 65652660 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-n511 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 Oct 19 08:03

SPEC is set to: /home/Benchmark/speccpu2006-bin0922
  Filesystem  Type  Size  Used Avail Use% Mounted on
  /dev/sda7    xfs  424G  21G  404G   5%  /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.

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Platform Notes (Continued)

BIOS FUJITSU // American Megatrends Inc. V5.0.0.11 R1.0.0 for D3373-B1x
02/20/2017
Memory:
4x Samsung M391A2K43BB1-CRC 16 GB 2 rank 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/Benchmark/speccpu2006-bin0922/libs/32"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu2006-bin0922/libs/64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu2006-bin0922/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 by default
Filesystem page cache cleared with:
  echo 1 > /proc/sys/vm/drop_caches
runcspec command invoked through numactl i.e.:
  numactl --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
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
**SPEC CINT2006 Result**

Fujitsu

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**SPECint_rate2006 = Not Run**  
**SPECint_rate_base2006 = 200**

**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/Fujitsu-Platform-Settings-V1.2-BDW-RevF.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/Fujitsu-Platform-Settings-V1.2-BDW-RevF.xml

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.