# SPEC® CFP2006 Result

## Fujitsu

**PRIMERGY RX2530 M4, Intel Xeon Bronze 3104, 1.70GHz**

**SPECfp®_rate2006 = Not Run**

**SPECfp_rate_base2006 = 364**

<table>
<thead>
<tr>
<th>SPECfp®_rate2006 = Not Run</th>
<th>SPECfp_rate_base2006 = 364</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU2006 license:</strong></td>
<td>19</td>
</tr>
<tr>
<td><strong>Test sponsor:</strong></td>
<td>Fujitsu</td>
</tr>
<tr>
<td><strong>Tested by:</strong></td>
<td>Fujitsu</td>
</tr>
<tr>
<td><strong>Test date:</strong></td>
<td>Jul-2017</td>
</tr>
<tr>
<td><strong>Hardware Availability:</strong></td>
<td>Jul-2017</td>
</tr>
<tr>
<td><strong>Software Availability:</strong></td>
<td>Apr-2017</td>
</tr>
</tbody>
</table>

### Hardware

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong></td>
<td>Intel Xeon Bronze 3104</td>
</tr>
<tr>
<td><strong>CPU Characteristics:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CPU MHz:</strong></td>
<td>1700</td>
</tr>
<tr>
<td><strong>FPU:</strong></td>
<td>Integrated</td>
</tr>
<tr>
<td><strong>CPU(s) enabled:</strong></td>
<td>12 cores, 2 chips, 6 cores/chip</td>
</tr>
<tr>
<td><strong>CPU(s) orderable:</strong></td>
<td>1,2 chips</td>
</tr>
<tr>
<td><strong>Primary Cache:</strong></td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td><strong>Secondary Cache:</strong></td>
<td>1 MB I+D on chip per core</td>
</tr>
</tbody>
</table>

### Software

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating System:</strong></td>
<td>SUSE Linux Enterprise Server 12 SP2</td>
</tr>
<tr>
<td><strong>Compiler:</strong></td>
<td>C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux; Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux</td>
</tr>
<tr>
<td><strong>Auto Parallel:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>File System:</strong></td>
<td>tmpfs</td>
</tr>
<tr>
<td><strong>System State:</strong></td>
<td>Run level 3 (multi-user)</td>
</tr>
</tbody>
</table>

---

**Copies**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>410.bwaves</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>416.gamess</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>433.milc</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>434.zeusmp</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>435.gromacs</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>436.cactusADM</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>437.leslie3d</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>444.namd</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>447.dealII</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>450.soplex</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>453.povray</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>454.calculix</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>459.GemsFDTD</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>465.tonto</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>470.lbm</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>481.wrf</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>482.sphinx3</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

---

**SPECfp_rate_base2006 = 364**

---

Continued on next page

---

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Fujitsu
PRIMERGY RX2530 M4, Intel Xeon Bronze 3104, 1.70GHz

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 364

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

L3 Cache: 8.25 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (24 x 16 GB 2Rx4 PC4-2666V-R, running at 2133 MHz)
Disk Subsystem: 752 GB tmpfs
Other Hardware: None

Base Pointers: 32/64-bit
Peak Pointers: Not Applicable
Other Software: None

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>410.bwaves</td>
<td>12</td>
<td>311</td>
<td>525</td>
<td>311</td>
<td>525</td>
<td>311</td>
<td>525</td>
</tr>
<tr>
<td>416.gamess</td>
<td>12</td>
<td>887</td>
<td>265</td>
<td>886</td>
<td>265</td>
<td>885</td>
<td>265</td>
</tr>
<tr>
<td>433.milc</td>
<td>12</td>
<td>207</td>
<td>531</td>
<td>207</td>
<td>531</td>
<td>207</td>
<td>531</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>12</td>
<td>247</td>
<td>443</td>
<td>247</td>
<td>443</td>
<td>246</td>
<td>444</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>12</td>
<td>310</td>
<td>276</td>
<td>307</td>
<td>279</td>
<td>307</td>
<td>279</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>12</td>
<td>283</td>
<td>507</td>
<td>283</td>
<td>506</td>
<td>283</td>
<td>507</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>12</td>
<td>297</td>
<td>380</td>
<td>297</td>
<td>380</td>
<td>297</td>
<td>380</td>
</tr>
<tr>
<td>444.namd</td>
<td>12</td>
<td>490</td>
<td>197</td>
<td>490</td>
<td>197</td>
<td>490</td>
<td>197</td>
</tr>
<tr>
<td>447.dealII</td>
<td>12</td>
<td>336</td>
<td>408</td>
<td>336</td>
<td>408</td>
<td>337</td>
<td>408</td>
</tr>
<tr>
<td>450.soplex</td>
<td>12</td>
<td>377</td>
<td>266</td>
<td>376</td>
<td>266</td>
<td>375</td>
<td>267</td>
</tr>
<tr>
<td>453.povray</td>
<td>12</td>
<td>164</td>
<td>389</td>
<td>165</td>
<td>388</td>
<td>164</td>
<td>389</td>
</tr>
<tr>
<td>454.calculix</td>
<td>12</td>
<td>269</td>
<td>368</td>
<td>270</td>
<td>367</td>
<td>269</td>
<td>368</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>12</td>
<td>468</td>
<td>272</td>
<td>467</td>
<td>273</td>
<td>467</td>
<td>272</td>
</tr>
<tr>
<td>465.tonto</td>
<td>12</td>
<td>395</td>
<td>299</td>
<td>401</td>
<td>295</td>
<td>395</td>
<td>299</td>
</tr>
<tr>
<td>470.lbm</td>
<td>12</td>
<td>259</td>
<td>638</td>
<td>256</td>
<td>644</td>
<td>257</td>
<td>640</td>
</tr>
<tr>
<td>481.wrf</td>
<td>12</td>
<td>291</td>
<td>461</td>
<td>290</td>
<td>462</td>
<td>292</td>
<td>459</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>12</td>
<td>880</td>
<td>266</td>
<td>882</td>
<td>265</td>
<td>882</td>
<td>265</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"
Kernel Boot Parameter set with: nohz_full=1-11
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

Continued on next page
**SPEC CFP2006 Result**

**Fujitsu**

PRIMERGY RX2530 M4, Intel Xeon Bronze 3104, 1.70GHz

<table>
<thead>
<tr>
<th>SPECfp_rate2006 = Not Run</th>
<th>SPECfp_rate_base2006 = 364</th>
</tr>
</thead>
</table>

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

**Operating System Notes (Continued)**

Process tuning 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
- 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)
running on linux-zz9i Wed Jul 26 03:22:20 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) Bronze 3104 CPU @ 1.70GHz
- 2 "physical id"s (chips)
- 12 "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 : 6
- siblings : 6
- physical 0: cores 0 1 2 3 4 5
- physical 1: cores 0 1 2 3 4 5
- cache size : 8448 KB

From /proc/meminfo

- MemTotal: 394407660 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

Continued on next page
Fujitsu
PRIMERGY RX2530 M4, Intel Xeon Bronze 3104, 1.70GHz

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 364

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

Platform Notes (Continued)

# 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
(9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jul 25 08:39

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:

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 2133 MHz

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 cleaned 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>
SPEC CFP2006 Result

Fujitsu

PRIMERGY RX2530 M4, Intel Xeon Bronze 3104, 1.70GHz

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 364

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

Base Compiler Invocation

C benchmarks:
  icc -m64
C++ benchmarks:
  icpc -m64
Fortran benchmarks:
  ifort -m64
Benchmarks using both Fortran and C:
  icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Continued on next page
Fujitsu
PRIMERGY RX2530 M4, Intel Xeon Bronze 3104, 1.70GHz

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 364

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

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

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

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

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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.