Fujitsu
PRIMERGY RX2540 M4, Intel Xeon Silver 4116, 2.10GHz

| Test date: | Jul-2017 |
| Test sponsor: | Fujitsu |
| Tested by: | Fujitsu |
| Hardware Availability: | Jul-2017 |
| Software Availability: | Apr-2017 |

| SPECfp_rate_base2006 = 938 |

**CPU2006 license:** 19

**Operating System:** SUSE Linux Enterprise Server 12 SP2

**Compiler:** 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

**Auto Parallel:** No

**File System:** tmpfs

**System State:** Run level 3 (multi-user)

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### SPEC® CFP2006 Result

<table>
<thead>
<tr>
<th>Spec Test</th>
<th>SPECfp_rate2006</th>
<th>SPECfp_rate_base2006</th>
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**Fujitsu PRIMERGY RX2540 M4, Intel Xeon Silver 4116, 2.10GHz**

**Software**

- Operating System: SUSE Linux Enterprise Server 12 SP2
- Compiler: 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
- Auto Parallel: No
- File System: tmpfs
- System State: Run level 3 (multi-user)
Fujitsu
PRIMERGY RX2540 M4, Intel Xeon Silver 4116, 2.10GHz

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 938

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"
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

Continued on next page
SPEC CFP2006 Result

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CPU2006 license: 19
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Tested by: Fujitsu

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

Operating System Notes (Continued)

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 = Enabled
- IMC Interleaving = 1-way
- LLC Dead Line Alloc = Disabled
- Stale AtoS = Enabled

Sysinfo program /home/memory/speccpu/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
routing on linux-zz9i Tue Jul 4 01:30:44 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 4116 CPU @ 2.10GHz
- 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 caution.)
- 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: 394407232 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
**SPEC CFP2006 Result**

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CPU2006 license: 19
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**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.

```bash
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 3 18:18

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 D3384-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)

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**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.:
numactl --interleave=all runspec <etc>

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
# SPEC CFP2006 Result

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## SPECfp_rate2006 = Not Run

SPECfp_rate_base2006 = 938

## 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.games: -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
- 454.calculix: -DSPEC_CPU_LP64 -nofor_main
- 459.GemsFDTD: -DSPEC_CPU_LP64
- 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`
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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

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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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