# SPEC® CFP2006 Result

**M Computers s.r.o.**  
HPC S2600WF (Intel Xeon Silver 4112, 2.60 GHz)  

<table>
<thead>
<tr>
<th>SPECfp&lt;sub&gt;®&lt;/sub&gt;_rate2006</th>
<th>Not Run</th>
</tr>
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<tbody>
<tr>
<td>SPECfp&lt;sub&gt;®&lt;/sub&gt;_rate_base2006</td>
<td>425</td>
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**CPU2006 license:** 4204  
**Test sponsor:** M Computers s.r.o.  
**Tested by:** M Computers s.r.o.  
**Test date:** Aug-2017  
**Hardware Availability:** Jul-2017  
**Software Availability:** Apr-2017

| Copies | 20.0 | 40.0 | 60.0 | 80.0 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 | 340 | 360 | 380 | 400 | 420 | 440 | 460 | 480 | 500 | 520 | 540 | 560 | 580 | 600 | 620 | 640 | 660 | 680 | 700 |
|--------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 410.bwaves | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 416.gamess  | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 433.milc   | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 434.zeusmp | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 435.gromacs| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 436.cactusADM | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 437.leslie3d| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 444.namd   | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 447.dealII | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 450.soplex | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 453.povray | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 454.calculix| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 459.GemsFDTD| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 465.tonto  | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 470.lbm    | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 481.wrf   | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 482.sphinx3| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Hardware**

- **CPU Name:** Intel Xeon Silver 4112  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.00 GHz  
- **CPU MHz:** 2600  
- **FPU:** Integrated  
- **CPU(s) enabled:** 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
- **CPU orderable:** 1.2 chip  
- **Primary Cache:** 32 KB I + 32 KB D on chip per core  
- **Secondary Cache:** 1 MB I+D on chip per core

**Software**

- **Operating System:** SUSE Linux Enterprise Server 12 SP2  
  4.4.21-69-default  
- **Compiler:** C/C++: Version 17.0.4.196 of Intel C/C++ Compiler for Linux; Fortran: Version 17.0.4.196 of Intel Fortran Compiler for Linux  
- **Auto Parallel:** No  
- **File System:** xfs  
- **System State:** Run level 3

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Continued on next page

Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
M Computers s.r.o.

HPC S2600WF (Intel Xeon Silver 4112, 2.60 GHz)

**SPEC CFP2006 Result**

**SPECfp_rate2006 = Not Run**

**SPECfp_rate_base2006 = 425**

CPU2006 license: 4204

Test sponsor: M Computers s.r.o.

Tested by: M Computers s.r.o.

Test date: Aug-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 2Rx8 PC4-2400V-R, running at 2400 MT/s)

Disk Subsystem: 1 x 1600 GB SATA SSD

Other Hardware: None

Base Pointers: 32/64-bit

Peak Pointers: 32/64-bit

Other Software: None

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base Pointers</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak Pointers</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>360</td>
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<td>867</td>
<td>360</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"

### Platform Notes

BIOS settings:
- Patrol Scrub=Disabled
- CPU and Power Performance Policy=Performance

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SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 425

Platform Notes (Continued)

Set Fan Profile=Performance
Sysinfo program /spec/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (300de3427349e6453f54e8c50448c3)
runtime on kvasir Wed Aug 16 15:51:26 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 4112 CPU @ 2.60GHz
  2 "physical id"s (chips)
  16 "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 : 8
physical 0: cores 1 2 4 5
physical 1: cores 1 2 4 5
cache size : 8448 KB

From /proc/meminfo
MemTotal: 394667276 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:
  NAME=\"SLES\"
  VERSION=\"12-SP2\"
  VERSION_ID=\"12.2\"
# 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 kvasir 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 Aug 16 14:09

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Platform Notes (Continued)

SPEC is set to: /spec
Filesystem     Type  Size  Used  Avail  Use%  Mounted on
/dev/sda1      xfs   650G   48G  603G   8%  /

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 Intel Corporation SE5C620.86B.0X.01.0007.060920171037 06/09/2017
Memory:
1x Hynix HMA42GR7AFR4N-UH 16 GB 2 rank 2400 MHz
23x Samsung M393A2G40EB1-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 = "/spec/lib/ia32:/spec/lib/intel64:/spec/sh11.2"

Binaries compiled on a system with 2x Intel Xeon-SP 4112 CPU + 192GB RAM
memory using Redhat Enterprise Linux 7.3
Transparent Huge Pages enabled by default.
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>

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
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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
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

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

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/MComputers-Platform-Settings-V1.2-revB.20170920.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.