SPEC® CFP2006 Result

Inspur Corporation

Inspur NF5180M4 (Intel Xeon E5-2630 v4)

SPECfp®2006 = 113
SPECfp_base2006 = 108

CPU2006 license: 3358
Test sponsor: Inspur Corporation
Tested by: Inspur Corporation

Test date: Jul-2017
Hardware Availability: Apr-2016
Software Availability: Apr-2017

Inspur Corporation

SPECfp2006 = 113
SPECfp_base2006 = 108

Hardware

CPU Name: Intel Xeon E5-2630 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip
CPU(s) orderable: 1.2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Software

Operating System: Red Hat Enterprise Linux Server release 7.3
(Maipo) 3.10.0-514.el7.x86_64
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: Yes
File System: xfs

Continued on next page
## SPEC CFP2006 Result

### Inspur Corporation

**Inspur NF5180M4 (Intel Xeon E5-2630 v4)**

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>113</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>108</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3358  
**Test sponsor:** Inspur Corporation  
**Tested by:** Inspur Corporation  
**Test date:** Jul-2017  
**Hardware Availability:** Apr-2016  
**Software Availability:** Apr-2017

| L3 Cache: | 25 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz) |
| Disk Subsystem: | 1 x 450 GB SATA SSD |
| Other Hardware: | None |

| System State: | Run level 5 (multi-user) |
| Base Pointers: | 64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | None |

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>25.9</td>
<td>525</td>
<td>26.0</td>
<td>523</td>
<td>525</td>
<td>25.9</td>
<td>526</td>
<td>525</td>
<td>25.9</td>
<td>526</td>
<td>525</td>
</tr>
<tr>
<td>416.gamess</td>
<td>525</td>
<td>37.3</td>
<td>526</td>
<td>37.2</td>
<td>528</td>
<td>37.0</td>
<td>481</td>
<td>40.7</td>
<td>480</td>
<td>40.8</td>
<td>482</td>
</tr>
<tr>
<td>433.milc</td>
<td>126</td>
<td>73.0</td>
<td>125</td>
<td>73.2</td>
<td>126</td>
<td>73.1</td>
<td>126</td>
<td>73.1</td>
<td>126</td>
<td>73.1</td>
<td></td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>48.0</td>
<td>190</td>
<td>47.9</td>
<td>190</td>
<td>48.0</td>
<td>190</td>
<td>48.0</td>
<td>190</td>
<td>48.0</td>
<td>190</td>
<td></td>
</tr>
<tr>
<td>435.gromacs</td>
<td>159</td>
<td>44.9</td>
<td>159</td>
<td>45.0</td>
<td>159</td>
<td>45.0</td>
<td>159</td>
<td>45.0</td>
<td>159</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>16.1</td>
<td>744</td>
<td>16.3</td>
<td>734</td>
<td>15.8</td>
<td>758</td>
<td>16.1</td>
<td>744</td>
<td>16.3</td>
<td>758</td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>28.3</td>
<td>332</td>
<td>26.7</td>
<td>352</td>
<td>26.4</td>
<td>356</td>
<td>28.3</td>
<td>332</td>
<td>26.7</td>
<td>352</td>
<td></td>
</tr>
<tr>
<td>444.namd</td>
<td>295</td>
<td>27.2</td>
<td>295</td>
<td>27.2</td>
<td>294</td>
<td>27.3</td>
<td>288</td>
<td>27.9</td>
<td>288</td>
<td>27.9</td>
<td></td>
</tr>
<tr>
<td>447.dealII</td>
<td>189</td>
<td>60.5</td>
<td>189</td>
<td>60.6</td>
<td>189</td>
<td>60.6</td>
<td>189</td>
<td>60.6</td>
<td>189</td>
<td>60.6</td>
<td></td>
</tr>
<tr>
<td>450.soplex</td>
<td>177</td>
<td>47.1</td>
<td>177</td>
<td>47.1</td>
<td>175</td>
<td>47.7</td>
<td>177</td>
<td>47.1</td>
<td>175</td>
<td>47.7</td>
<td></td>
</tr>
<tr>
<td>453.povray</td>
<td>96.4</td>
<td>55.2</td>
<td>96.9</td>
<td>54.9</td>
<td>95.7</td>
<td>55.6</td>
<td>84.9</td>
<td>62.7</td>
<td>85.4</td>
<td>62.3</td>
<td></td>
</tr>
<tr>
<td>454.calculix</td>
<td>149</td>
<td>55.5</td>
<td>149</td>
<td>55.5</td>
<td>149</td>
<td>55.4</td>
<td>143</td>
<td>57.7</td>
<td>143</td>
<td>57.5</td>
<td></td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>49.9</td>
<td>213</td>
<td>53.5</td>
<td>198</td>
<td>49.1</td>
<td>216</td>
<td>42.2</td>
<td>251</td>
<td>42.2</td>
<td>251</td>
<td></td>
</tr>
<tr>
<td>465.tonto</td>
<td>243</td>
<td>40.6</td>
<td>243</td>
<td>40.6</td>
<td>247</td>
<td>39.9</td>
<td>185</td>
<td>53.2</td>
<td>187</td>
<td>52.7</td>
<td></td>
</tr>
<tr>
<td>470.lbm</td>
<td>19.6</td>
<td>702</td>
<td>19.1</td>
<td>719</td>
<td>19.2</td>
<td>715</td>
<td>19.6</td>
<td>702</td>
<td>19.1</td>
<td>719</td>
<td></td>
</tr>
<tr>
<td>481.wrf</td>
<td>96.6</td>
<td>116</td>
<td>96.9</td>
<td>115</td>
<td>96.4</td>
<td>116</td>
<td>96.6</td>
<td>116</td>
<td>96.9</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>282</td>
<td>69.1</td>
<td>282</td>
<td>69.1</td>
<td>281</td>
<td>69.4</td>
<td>282</td>
<td>69.1</td>
<td>281</td>
<td>69.4</td>
<td></td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

### Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

### Platform Notes

**BIOS and OS configuration:**
- SCALING_GOVERNOR set to Performance
- Hardware Prefetch set to Disable
- VT Support set to Disable
- CIE Support set to Disable
- Hyper-Threading set to Disable
- Sysinfo program /home/CPU2006/config/sysinfo.rev6993
  Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
  running on localhost.localdomain Wed Jul 19 15:56:25 2017

Continued on next page
Inspur Corporation

Inspur NF5180M4 (Intel Xeon E5-2630 v4)

SPECfp2006 = 113
SPECfp_base2006 = 108

CPU2006 license: 3358
Test sponsor: Inspur Corporation
Tested by: Inspur Corporation

CPU2006 license: 3358
Test date: Jul-2017
Hardware Availability: Apr-2016
Software Availability: Apr-2017

Platform Notes (Continued)

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) CPU E5-2630 v4 @ 2.20GHz
  2 "physical id"s (chips)
  20 "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 : 10
siblings : 10
  physical 0: cores 0 1 2 3 4 8 9 10 11 12
  physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB

From /proc/meminfo
MemTotal: 263853716 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
uname -a:
Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016 x86_64 x86_64 x86_64 GNU/Linux
run-level 5 Jul 19 10:37

SPEC is set to: /home/CPU2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 392G 151G 242G 39% /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.
Continued on next page
Inspur Corporation

Inspur NF5180M4 (Intel Xeon E5-2630 v4)

SPECfp2006 = 113
SPECfp_base2006 = 108

CPU2006 license: 3358
Test sponsor: Inspur Corporation
Tested by: Inspur Corporation

Test date: Jul-2017
Hardware Availability: Apr-2016
Software Availability: Apr-2017

Platform Notes (Continued)

BIOS American Megatrends Inc. 4.1.11 09/07/2016
Memory:
  8x NO DIMM NO DIMM
  16x Samsung M393A2K43BB1-CNC 16 GB 2 rank 2400 MHz, configured at 2133 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/CPU2006/lib/ia32:/home/CPU2006/lib/intel64:/home/CPU2006/sh10.2"
OMP_NUM_THREADS = "20"

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:
  shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run

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 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
Inspur Corporation

Inspur NF5180M4 (Intel Xeon E5-2630 v4)

SPECfp2006 = 113
SPECfp_base2006 = 108

CPU2006 license: 3358
Test sponsor: Inspur Corporation
Tested by: Inspur Corporation

Test date: Jul-2017
Hardware Availability: Apr-2016
Software Availability: Apr-2017

Base Portability Flags (Continued)

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 -parallel -qopt-prefetch

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

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

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags
Inspur Corporation
Inspur NF5180M4 (Intel Xeon E5-2630 v4)

SPECfp2006 = 113
SPECfp_base2006 = 108

CPU2006 license: 3358
Test sponsor: Inspur Corporation
Tested by: Inspur Corporation

Test date: Jul-2017
Hardware Availability: Apr-2016
Software Availability: Apr-2017

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes
470.lbm: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes
450.soplex: basepeak = yes
453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes
416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll2 -inline-level=0 -qopt-prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -inline-alloc -qopt-malloc-options=3
-auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes

Continued on next page
Inspur Corporation

Inspur NF5180M4 (Intel Xeon E5-2630 v4)

**SPEC CFP2006 Result**

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>113</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>108</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3358

**Test date:** Jul-2017

**Test sponsor:** Inspur Corporation

**Tested by:** Inspur Corporation

**Hardware Availability:** Apr-2016

**Software Availability:** Apr-2017

**Tested with SPEC CPU2006 v1.2.**

**Report generated on Tue Aug 8 15:41:34 2017 by SPEC CPU2006 PS/PDF formatter v6932.**

**Originally published on 8 August 2017.**

---

**Peak Optimization Flags (Continued)**

454.calculix: -xCORE-AVX2 -ipo -03 -no-prec-div -auto-ilp32

481.wrf: basepeak = yes

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/Inspur-Platform-Settings-V1.0-HSW.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/Inspur-Platform-Settings-V1.0-HSW.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.