



SPEC[®] CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Nokia AirFrame AR-D521U-A

SPECfp[®]2006 = **139**

SPECfp_base2006 = **131**

CPU2006 license: 4569

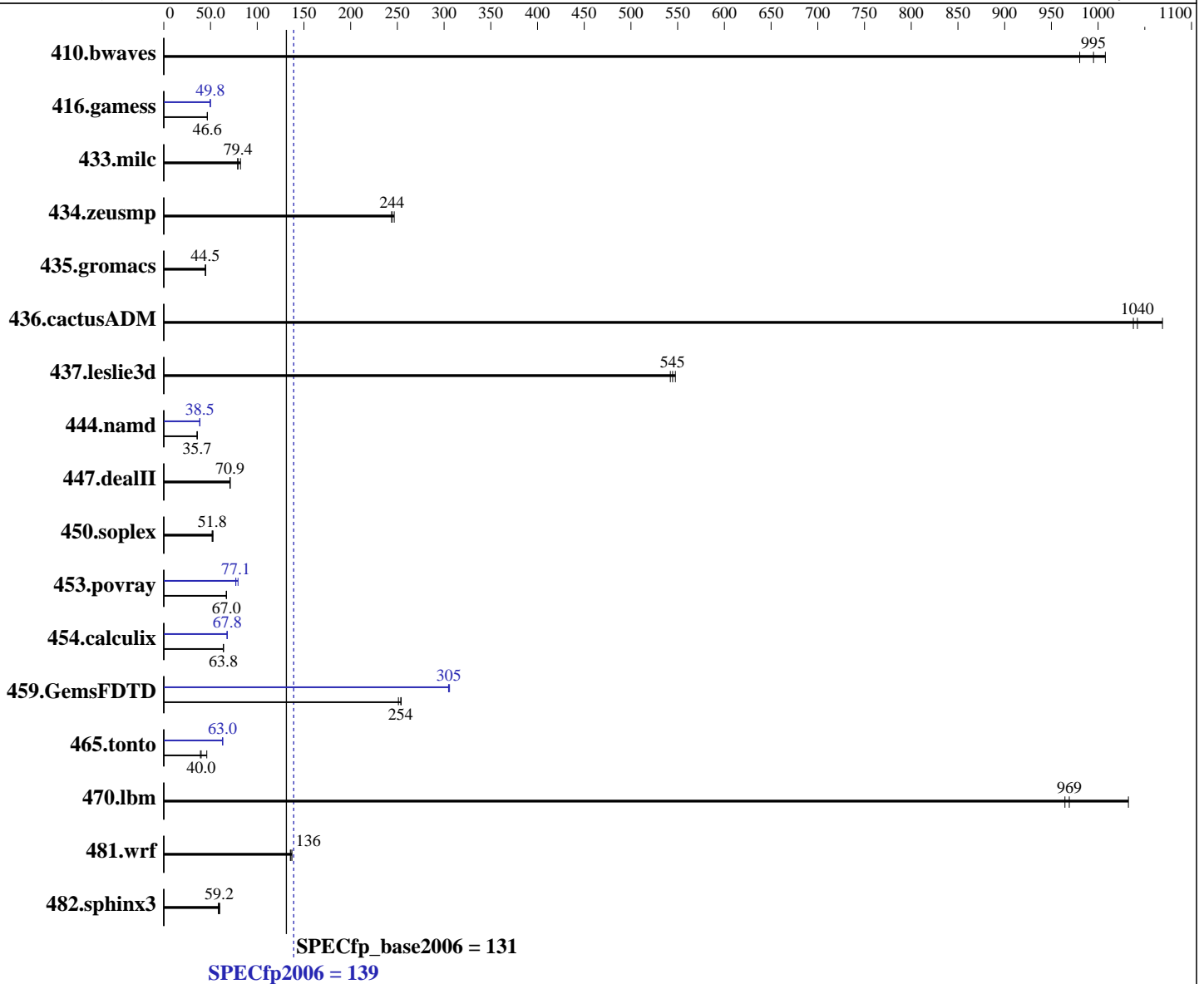
Test sponsor: Nokia

Tested by: Nokia

Test date: Jun-2017

Hardware Availability: Sep-2017

Software Availability: May-2017



Hardware

CPU Name: Intel Xeon Platinum 8180
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 56 cores, 2 chips, 28 cores/chip, 2 threads/core
 CPU(s) 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)
 3.10.0-514.21.1.el7.x86_64
 Compiler: C/C++: Version 17.0.1.132 of Intel C/C++ Compiler for Linux;
 Fortran: Version 17.0.1.132 of Intel Fortran Compiler for Linux
 Auto Parallel: Yes
 File System: ext4

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Nokia

AirFrame AR-D521U-A

SPECfp2006 = **139**

SPECfp_base2006 = **131**

CPU2006 license: 4569

Test sponsor: Nokia

Tested by: Nokia

Test date: Jun-2017

Hardware Availability: Sep-2017

Software Availability: May-2017

L3 Cache: 38.5 MB I+D on chip per chip
 Other Cache: None
 Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
 Disk Subsystem: 1.5 TB (Intel NVME)
 Other Hardware: None

System State: Run level 3(multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 13.9 | 980 | 13.7 | 995 | 13.5 | 1010 | 13.9 | 980 | 13.7 | 995 | 13.5 | 1010 |
| 416.gamess | 420 | 46.6 | 420 | 46.6 | 420 | 46.6 | 394 | 49.7 | 393 | 49.8 | 393 | 49.8 |
| 433.milc | 112 | 82.1 | 116 | 79.0 | 116 | 79.4 | 112 | 82.1 | 116 | 79.0 | 116 | 79.4 |
| 434.zeusmp | 36.9 | 247 | 37.3 | 244 | 37.3 | 244 | 36.9 | 247 | 37.3 | 244 | 37.3 | 244 |
| 435.gromacs | 160 | 44.7 | 160 | 44.5 | 160 | 44.5 | 160 | 44.7 | 160 | 44.5 | 160 | 44.5 |
| 436.cactusADM | 11.5 | 1040 | 11.2 | 1070 | 11.5 | 1040 | 11.5 | 1040 | 11.2 | 1070 | 11.5 | 1040 |
| 437.leslie3d | 17.3 | 542 | 17.2 | 548 | 17.3 | 545 | 17.3 | 542 | 17.2 | 548 | 17.3 | 545 |
| 444.namd | 224 | 35.8 | 225 | 35.7 | 224 | 35.7 | 208 | 38.5 | 208 | 38.6 | 208 | 38.5 |
| 447.dealII | 161 | 70.9 | 161 | 70.9 | 161 | 71.0 | 161 | 70.9 | 161 | 70.9 | 161 | 71.0 |
| 450.soplex | 161 | 51.8 | 158 | 52.7 | 161 | 51.8 | 161 | 51.8 | 158 | 52.7 | 161 | 51.8 |
| 453.povray | 79.5 | 66.9 | 79.4 | 67.0 | 79.2 | 67.2 | 67.0 | 79.4 | 69.0 | 77.1 | 69.1 | 77.0 |
| 454.calculix | 129 | 63.9 | 129 | 63.8 | 129 | 63.8 | 122 | 67.8 | 122 | 67.9 | 122 | 67.8 |
| 459.GemsFDTD | 41.8 | 254 | 42.3 | 251 | 41.8 | 254 | 34.7 | 306 | 34.8 | 305 | 34.8 | 305 |
| 465.tonto | 246 | 40.0 | 214 | 46.0 | 251 | 39.2 | 156 | 62.9 | 156 | 63.0 | 156 | 63.0 |
| 470.lbm | 14.2 | 965 | 14.2 | 969 | 13.3 | 1030 | 14.2 | 965 | 14.2 | 969 | 13.3 | 1030 |
| 481.wrf | 82.1 | 136 | 81.4 | 137 | 82.5 | 135 | 82.1 | 136 | 81.4 | 137 | 82.5 | 135 |
| 482.sphinx3 | 329 | 59.2 | 334 | 58.4 | 326 | 59.8 | 329 | 59.2 | 334 | 58.4 | 326 | 59.8 |

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

Sysinfo program /run/media/root/SPEC/SPEC_AVX3/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on skylake-dual-8180 Thu Jun 15 14:44:34 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) Platinum 8180 CPU @ 2.50GHz
 Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Nokia

SPECfp2006 = 139

AirFrame AR-D521U-A

SPECfp_base2006 = 131

CPU2006 license: 4569

Test sponsor: Nokia

Tested by: Nokia

Test date: Jun-2017

Hardware Availability: Sep-2017

Software Availability: May-2017

Platform Notes (Continued)

```

2 "physical id"s (chips)
112 "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 : 28
siblings : 56
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
cache size : 39424 KB

```

```

From /proc/meminfo
MemTotal:      394833816 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.3 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.3"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

```

```

uname -a:
Linux skylake-dual-8180 3.10.0-514.21.1.el7.x86_64 #1 SMP Sat Apr 22 02:41:35
EDT 2017 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Jun 15 10:21 last=5

```

SPEC is set to: /run/media/root/SPEC/SPEC_AVX3
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/nvme2n1    ext4  1.5T  241G  1.2T  18% /run/media/root/SPEC

```

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 American Megatrends Inc. 2A11 02/22/2017
Memory:
24x Micron 18ASF2G72PDZ-2G6D1 16 GB 2 rank 2666 MHz

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

| | | |
|--|--------------------------|------------|
| Nokia AirFrame AR-D521U-A | SPECfp2006 = | 139 |
| | SPECfp_base2006 = | 131 |

| | |
|------------------------------|--|
| CPU2006 license: 4569 | Test date: Jun-2017 |
| Test sponsor: Nokia | Hardware Availability: Sep-2017 |
| Tested by: Nokia | Software Availability: May-2017 |

Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,compact,1,0"

LD_LIBRARY_PATH = "/run/media/root/SPEC/SPEC_AVX3/lib/ia32:/run/media/root/SPEC/SPEC_AVX3/lib/intel64:/run/media/root/SPEC/SPEC_AVX3/sh10.2"

OMP_NUM_THREADS = "56"

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.

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
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



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Nokia

AirFrame AR-D521U-A

SPECfp2006 = 139

SPECfp_base2006 = 131

CPU2006 license: 4569
Test sponsor: Nokia
Tested by: Nokia

Test date: Jun-2017
Hardware Availability: Sep-2017
Software Availability: May-2017

Base Optimization Flags

C benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
C++ benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
Fortran benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
Benchmarks using both Fortran and C:
-xCORE-AVX512 -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

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-AVX512(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -fno-alias -auto-ilp32

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Nokia

AirFrame AR-D521U-A

SPECfp2006 = 139

SPECfp_base2006 = 131

CPU2006 license: 4569

Test sponsor: Nokia

Tested by: Nokia

Test date: Jun-2017

Hardware Availability: Sep-2017

Software Availability: May-2017

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(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-AVX512(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-AVX512(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-AVX512(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -inline-calloc -qopt-malloc-options=3
-auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX512 -ipo -O3 -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-revD.html>

<http://www.spec.org/cpu2006/flags/Default-Platform-Flags.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-revD.xml>

<http://www.spec.org/cpu2006/flags/Default-Platform-Flags.xml>



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

| | | |
|--|--------------------------|------------|
| Nokia AirFrame AR-D521U-A | SPECfp2006 = | 139 |
| | SPECfp_base2006 = | 131 |

CPU2006 license: 4569
Test sponsor: Nokia
Tested by: Nokia

Test date: Jun-2017
Hardware Availability: Sep-2017
Software Availability: May-2017

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.
Report generated on Thu Jul 13 14:50:24 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 13 July 2017.