



SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp®2006 = 121

PowerEdge M640 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp_base2006 = 118

CPU2006 license: 55

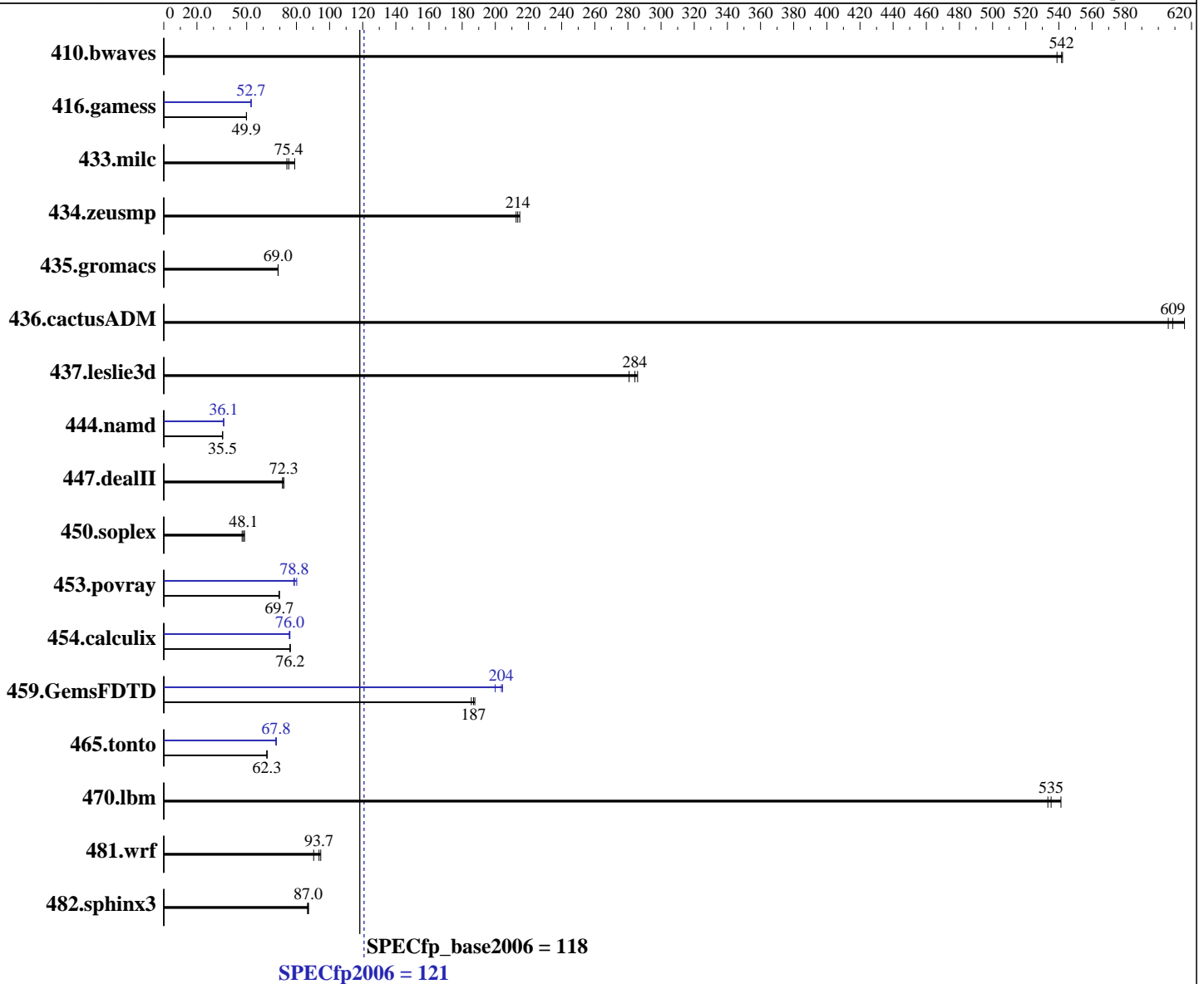
Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Sep-2017



Hardware

CPU Name: Intel Xeon Gold 5122
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 3600
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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

Software

Operating System: SUSE Linux Enterprise Server 12 SP3 4.4.70-2-default
 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: btrfs
 System State: Run level 3 (multi-user)

Continued on next page

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 121

PowerEdge M640 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp_base2006 = 118

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Sep-2017

L3 Cache: 16.5 MB I+D on chip per chip
 Other Cache: None
 Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)
 Disk Subsystem: 1 x 960 GB SATA SSD
 Other Hardware: None

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	25.1	542	25.2	539	<u>25.1</u>	<u>542</u>	25.1	542	25.2	539	<u>25.1</u>	<u>542</u>
416.gamess	392	49.9	393	49.8	<u>393</u>	<u>49.9</u>	<u>372</u>	<u>52.7</u>	372	52.6	371	52.7
433.milc	116	79.0	<u>122</u>	<u>75.4</u>	124	74.2	116	79.0	<u>122</u>	<u>75.4</u>	124	74.2
434.zeusmp	42.4	215	42.8	213	<u>42.6</u>	<u>214</u>	42.4	215	42.8	213	<u>42.6</u>	<u>214</u>
435.gromacs	103	69.0	104	68.9	<u>104</u>	<u>69.0</u>	103	69.0	104	68.9	<u>104</u>	<u>69.0</u>
436.cactusADM	19.4	616	19.7	606	<u>19.6</u>	<u>609</u>	19.4	616	19.7	606	<u>19.6</u>	<u>609</u>
437.leslie3d	<u>33.1</u>	<u>284</u>	33.5	281	32.9	286	<u>33.1</u>	<u>284</u>	33.5	281	32.9	286
444.namd	226	35.5	<u>226</u>	<u>35.5</u>	227	35.3	222	36.2	<u>222</u>	<u>36.1</u>	223	36.0
447.dealII	160	71.5	158	72.4	<u>158</u>	<u>72.3</u>	160	71.5	158	72.4	<u>158</u>	<u>72.3</u>
450.soplex	<u>173</u>	<u>48.1</u>	171	48.7	176	47.3	<u>173</u>	<u>48.1</u>	171	48.7	176	47.3
453.povray	76.3	69.7	<u>76.4</u>	<u>69.7</u>	76.5	69.6	<u>67.5</u>	<u>78.8</u>	67.8	78.5	66.3	80.2
454.calculix	108	76.1	108	76.3	<u>108</u>	<u>76.2</u>	108	76.1	<u>109</u>	<u>76.0</u>	109	75.7
459.GemsFDTD	57.2	186	<u>56.8</u>	<u>187</u>	56.5	188	51.9	204	53.1	200	<u>52.1</u>	<u>204</u>
465.tonto	158	62.3	<u>158</u>	<u>62.3</u>	158	62.2	<u>145</u>	<u>67.8</u>	146	67.6	145	67.9
470.lbm	<u>25.7</u>	<u>535</u>	25.8	533	25.4	541	<u>25.7</u>	<u>535</u>	25.8	533	25.4	541
481.wrf	118	94.7	124	90.4	<u>119</u>	<u>93.7</u>	118	94.7	124	90.4	<u>119</u>	<u>93.7</u>
482.sphinx3	223	87.3	225	86.7	<u>224</u>	<u>87.0</u>	223	87.3	225	86.7	<u>224</u>	<u>87.0</u>

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 settings:
 Sub NUMA Cluster disabled
 Virtualization Technology disabled
 System Profile set to Custom
 CPU Performance set to Maximum Performance
 C States set to Autonomous
 C1E disabled
 Energy Efficient Turbo disabled
 Uncore Frequency set to Dynamic
 Energy Efficiency Policy set to Performance

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 121

PowerEdge M640 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp_base2006 = 118

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Sep-2017

Platform Notes (Continued)

```

Memory Patrol Scrub disabled
Logical Processor enabled
CPU Interconnect Bus Link Power Management disabled
PCI ASPM L1 Link Power Management disabled
Sysinfo program /root/cpu2006-1.2_ic17u3/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-287k Wed Aug 23 06:28:13 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) Gold 5122 CPU @ 3.60GHz
 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 5 9 13
  physical 1: cores 2 3 4 10
cache size : 16896 KB

```

```

From /proc/meminfo
MemTotal: 196682072 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

```

```

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 3
# 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-SP3"
VERSION_ID="12.3"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp3"

```

```

uname -a:
Linux linux-287k 4.4.70-2-default #1 SMP Wed Jun 7 15:12:06 UTC 2017
(4502c76) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Aug 23 02:01

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 121

PowerEdge M640 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp_base2006 = 118

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Sep-2017

Platform Notes (Continued)

```

SPEC is set to: /root/cpu2006-1.2_ic17u3
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda3       btrfs    928G  8.8G  917G   1% /
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 Dell Inc. 1.0.0 08/10/2017

Memory:

```

12x 002C00B3002C 18ASF2G72PDZ-2G6D1 16 GB 2 rank 2666 MHz
4x Not Specified Not Specified

```

(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 = "/root/cpu2006-1.2_ic17u3/lib/ia32:/root/cpu2006-1.2_ic17u3/lib/intel64:/root/cpu2006-1.2_ic17u3/sh10.2"

OMP_NUM_THREADS = "8"

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



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 121

PowerEdge M640 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp_base2006 = 118

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Sep-2017

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 -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

```



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 121

PowerEdge M640 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp_base2006 = 118

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Sep-2017

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-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-calloc -qopt-malloc-options=3
-auto -unroll4

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp2006 = 121

PowerEdge M640 (Intel Xeon Gold 5122, 3.60 GHz)

SPECfp_base2006 = 118

CPU2006 license: 55

Test date: Aug-2017

Test sponsor: Dell Inc.

Hardware Availability: Sep-2017

Tested by: Dell Inc.

Software Availability: Sep-2017

Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -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-revF.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Flags-PowerEdge14G-revC.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/Dell-Platform-Flags-PowerEdge14G-revC.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.

Report generated on Wed Sep 20 11:02:28 2017 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 19 September 2017.