



SPEC[®] CFP2006 Result

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ZTE

SPECfp[®]2006 = **113**

R5300 G3 (Intel Xeon E5-2660 v3)

SPECfp_base2006 = **108**

CPU2006 license: 3834

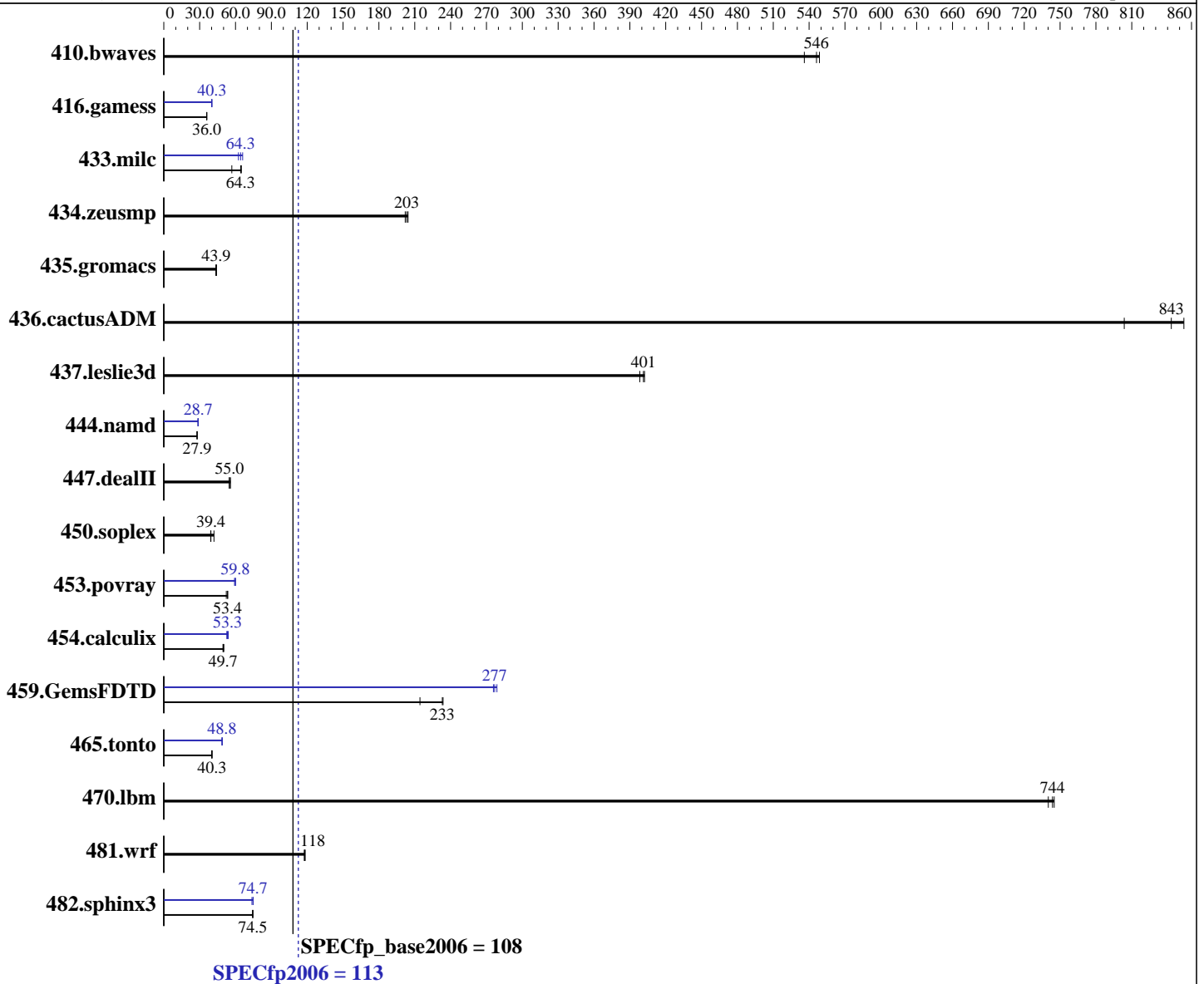
Test sponsor: ZTE

Tested by: ZTE

Test date: Feb-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2660 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core
 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

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Software

Operating System: Red Hat Enterprise Linux Server release 7.0(Maipo) 3.10.0-121.el7.x86_64
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 3 (multi-user)

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L3 Cache: 25 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 2*600 GB SAS, 10000RPM, RAID 0
 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	24.8	549	25.4	536	<u>24.9</u>	<u>546</u>	24.8	549	25.4	536	<u>24.9</u>	<u>546</u>
416.gamess	<u>545</u>	<u>36.0</u>	544	36.0	546	35.9	<u>486</u>	<u>40.3</u>	486	40.3	490	40.0
433.milc	<u>143</u>	<u>64.3</u>	141	64.9	161	56.9	147	62.5	<u>143</u>	<u>64.3</u>	139	66.0
434.zeusmp	45.0	202	<u>44.8</u>	<u>203</u>	44.5	204	45.0	202	<u>44.8</u>	<u>203</u>	44.5	204
435.gromacs	<u>163</u>	<u>43.9</u>	162	44.0	164	43.6	<u>163</u>	<u>43.9</u>	162	44.0	164	43.6
436.cactusADM	14.9	804	14.0	854	<u>14.2</u>	<u>843</u>	14.9	804	14.0	854	<u>14.2</u>	<u>843</u>
437.leslie3d	23.6	398	23.4	402	<u>23.4</u>	<u>401</u>	23.6	398	23.4	402	<u>23.4</u>	<u>401</u>
444.namd	<u>288</u>	<u>27.9</u>	287	27.9	289	27.8	<u>280</u>	<u>28.7</u>	280	28.7	280	28.7
447.dealII	205	55.8	<u>208</u>	<u>55.0</u>	209	54.7	205	55.8	<u>208</u>	<u>55.0</u>	209	54.7
450.soplex	<u>212</u>	<u>39.4</u>	199	42.0	213	39.2	<u>212</u>	<u>39.4</u>	199	42.0	213	39.2
453.povray	99.5	53.5	<u>99.7</u>	<u>53.4</u>	102	52.3	88.6	60.0	<u>89.0</u>	<u>59.8</u>	89.9	59.2
454.calculix	166	49.6	<u>166</u>	<u>49.7</u>	164	50.3	<u>155</u>	<u>53.3</u>	153	54.0	157	52.7
459.GemsFDTD	49.5	214	<u>45.5</u>	<u>233</u>	45.4	234	38.5	276	<u>38.3</u>	<u>277</u>	38.1	279
465.tonto	246	40.0	<u>244</u>	<u>40.3</u>	244	40.4	<u>202</u>	<u>48.8</u>	202	48.7	201	48.9
470.lbm	18.4	745	18.6	740	<u>18.5</u>	<u>744</u>	18.4	745	18.6	740	<u>18.5</u>	<u>744</u>
481.wrf	<u>94.8</u>	<u>118</u>	95.0	118	94.4	118	<u>94.8</u>	<u>118</u>	95.0	118	94.4	118
482.sphinx3	261	74.6	262	74.3	<u>262</u>	<u>74.5</u>	264	73.7	261	74.8	<u>261</u>	<u>74.7</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:
 Turbo boost Technology enabled
 Virtualization Technology disabled
 Hyper Threading Technology enabled
 Sysinfo program /home/speccpu/config/sysinfo.rev6914
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ 2b55956e7c0e338e808a36a21505f13a
 running on localhost.localdomain Sun Feb 22 14:50:00 2015

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

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Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E5-2660 v3 @ 2.60GHz

2 "physical id"s (chips)

40 "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 : 20

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: 263642568 kB

HugePages_Total: 2048

Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*

os-release:

NAME="Red Hat Enterprise Linux Server"

VERSION="7.0 (Maipo)"

ID="rhel"

ID_LIKE="fedora"

VERSION_ID="7.0"

PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"

ANSI_COLOR="0;31"

CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"

redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)

system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)

system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:

Linux localhost.localdomain 3.10.0-121.el7.x86_64 #1 SMP Tue Apr 8 10:48:19

EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 17 18:35

SPEC is set to: /home/speccpu

Filesystem Type Size Used Avail Use% Mounted on

/dev/mapper/rhel-home xfs 503G 44G 460G 9% /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.

BIOS INSYDE Corp. UBF10.01.07_SVN0 02/12/2015

Memory:

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Platform Notes (Continued)

16x Micron 36ADS2G72PZ-2G1A1 16 GB 2 rank 2133 MHz
8x NO DIMM Unknown

(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 = "/home/speccpu/libs/32:/home/speccpu/libs/64:/home/speccpu/sh"

OMP_NUM_THREADS = "20"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
memory using RedHat EL 7.0

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent_hugepage/enabled

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

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Base Portability Flags (Continued)

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 -opt-prefetch
-ansi-alias

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

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



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Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:

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

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/ZTE-Platform-Flags-V2.0.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/ZTE-Platform-Flags-V2.0.xml>

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Tested with SPEC CPU2006 v1.2.

Report generated on Tue Mar 24 17:17:48 2015 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 24 March 2015.