



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = 103

PRIMERGY TX1310 M3, Intel Xeon E3-1245 v6, 3.7GHz

SPECfp_base2006 = 102

CPU2006 license: 19

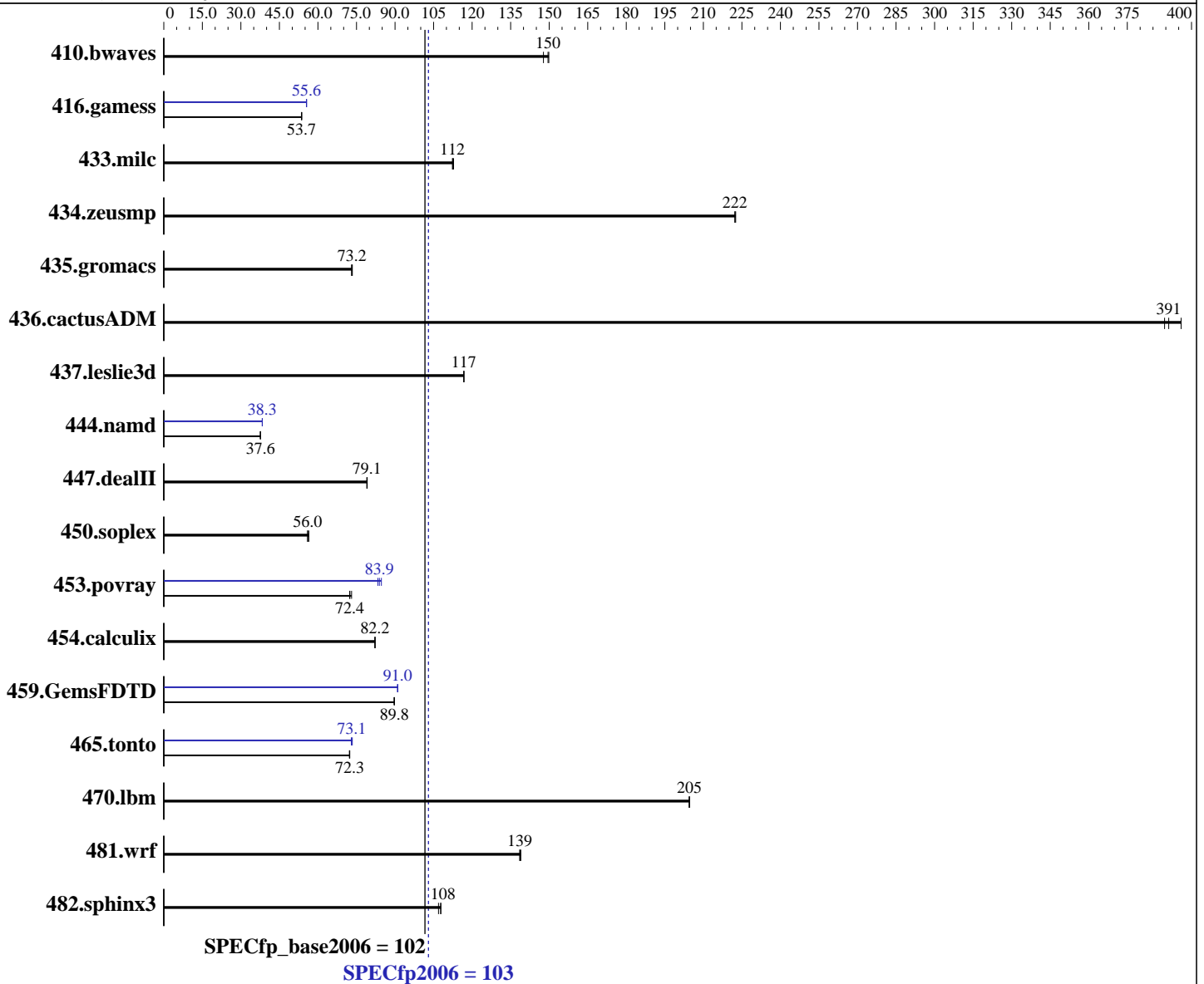
Test date: Mar-2017

Test sponsor: Fujitsu

Hardware Availability: Jun-2017

Tested by: Fujitsu

Software Availability: Nov-2016



Hardware

CPU Name: Intel Xeon E3-1245 v6
 CPU Characteristics: Intel Turbo Boost Technology up to 4.10 GHz
 CPU MHz: 3700
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 12 SP2 (x86_64) 4.4.21-68-default
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux;
 Fortran: Version 17.0.0.098 of Intel Fortran Compiler for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2400T-E)
 Disk Subsystem: 1 x 2TB, SATA III, 7200 RPM
 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	92.0	148	<u>90.9</u>	<u>150</u>	90.7	150	92.0	148	<u>90.9</u>	<u>150</u>	90.7	150
416.gamess	365	53.7	<u>365</u>	<u>53.7</u>	365	53.6	353	55.5	<u>352</u>	<u>55.6</u>	352	55.6
433.milc	<u>81.7</u>	<u>112</u>	81.4	113	81.7	112	<u>81.7</u>	<u>112</u>	81.4	113	81.7	112
434.zeusmp	40.9	222	40.9	223	<u>40.9</u>	<u>222</u>	40.9	222	40.9	223	<u>40.9</u>	<u>222</u>
435.gromacs	<u>97.5</u>	<u>73.2</u>	97.7	73.1	97.3	73.4	<u>97.5</u>	<u>73.2</u>	97.7	73.1	97.3	73.4
436.cactusADM	30.7	390	<u>30.6</u>	<u>391</u>	30.2	396	30.7	390	<u>30.6</u>	<u>391</u>	30.2	396
437.leslie3d	<u>80.5</u>	<u>117</u>	80.5	117	80.5	117	<u>80.5</u>	<u>117</u>	80.5	117	80.5	117
444.namd	<u>213</u>	<u>37.6</u>	213	37.6	213	37.6	209	38.3	209	38.3	<u>209</u>	<u>38.3</u>
447.dealII	145	79.0	144	79.2	<u>145</u>	<u>79.1</u>	145	79.0	144	79.2	<u>145</u>	<u>79.1</u>
450.soplex	149	56.0	<u>149</u>	<u>56.0</u>	148	56.5	149	56.0	<u>149</u>	<u>56.0</u>	148	56.5
453.povray	73.5	72.4	72.8	73.1	<u>73.5</u>	<u>72.4</u>	62.8	84.7	63.8	83.3	<u>63.4</u>	<u>83.9</u>
454.calculix	100	82.2	100	82.1	<u>100</u>	<u>82.2</u>	100	82.2	100	82.1	<u>100</u>	<u>82.2</u>
459.GemsFDTD	<u>118</u>	<u>89.8</u>	118	89.8	118	89.6	117	90.9	<u>117</u>	<u>91.0</u>	116	91.1
465.tonto	136	72.2	136	72.4	<u>136</u>	<u>72.3</u>	<u>135</u>	<u>73.1</u>	134	73.4	135	73.0
470.lbm	67.2	204	<u>67.2</u>	<u>205</u>	67.1	205	67.2	204	<u>67.2</u>	<u>205</u>	67.1	205
481.wrf	80.6	139	<u>80.6</u>	<u>139</u>	80.4	139	80.6	139	<u>80.6</u>	<u>139</u>	80.4	139
482.sphinx3	181	108	<u>181</u>	<u>108</u>	182	107	181	108	<u>181</u>	<u>108</u>	182	107

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"
Turbo mode set with :
cpupower -c all frequency-set -g performance
cpupower idle-set -d 2
cpupower idle-set -d 3
cpupower idle-set -d 4
echo always > /sys/kernel/mm/transparent_hugepage/enabled
KMP_AFFINITY = "granularity=fine,scatter"
OMP_NUM_THREADS = "4"
```



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Platform Notes

BIOS Settings:

Hyper-threading = Disabled

Sysinfo program /home/benchmark/speccpu-20160922-updated/config/sysinfo.rev6993

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)

running on linux-hz4t Mon Mar 6 18:56:39 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) CPU E3-1245 v6 @ 3.70GHz

1 "physical id"s (chips)

4 "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 : 4

physical 0: cores 0 1 2 3

cache size : 8192 KB

From /proc/meminfo

MemTotal: 65791952 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

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

SuSE-release:

SUSE Linux Enterprise Server 12 (x86_64)

VERSION = 12

PATCHLEVEL = 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 linux-hz4t 4.4.21-68-default #1 SMP Tue Oct 18 18:19:37 UTC 2016 (63cf368) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 6 18:34

SPEC is set to: /home/benchmark/speccpu-20160922-updated

Filesystem Type Size Used Avail Use% Mounted on

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Platform Notes (Continued)

/dev/sda3 xfs 1.8T 6.5G 1.8T 1% /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 FUJITSU // American Megatrends Inc. V5.0.0.11 R0.93.0 for D3521-A1x
02/23/2017

Memory:

4x Samsung M391A2K43BB1-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 = */home/benchmark/speccpu-20160922-updated/libs/32:/home/benchmark/speccpu-20160922-updated/libs/64:/home/benchmark/speccpu-20160922-updated/sh10.2*

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 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

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Base Portability Flags (Continued)

```
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



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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

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-BDW-RevE.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.xml>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-BDW-RevE.xml>

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For other inquiries, please contact webmaster@spec.org.

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