



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

PRIMERGY TX1330 M2, Intel Xeon E3-1240L v5, 2.10 GHz

SPECfp<sup>®</sup>2006 = 86.1

SPECfp\_base2006 = 84.0

CPU2006 license: 19

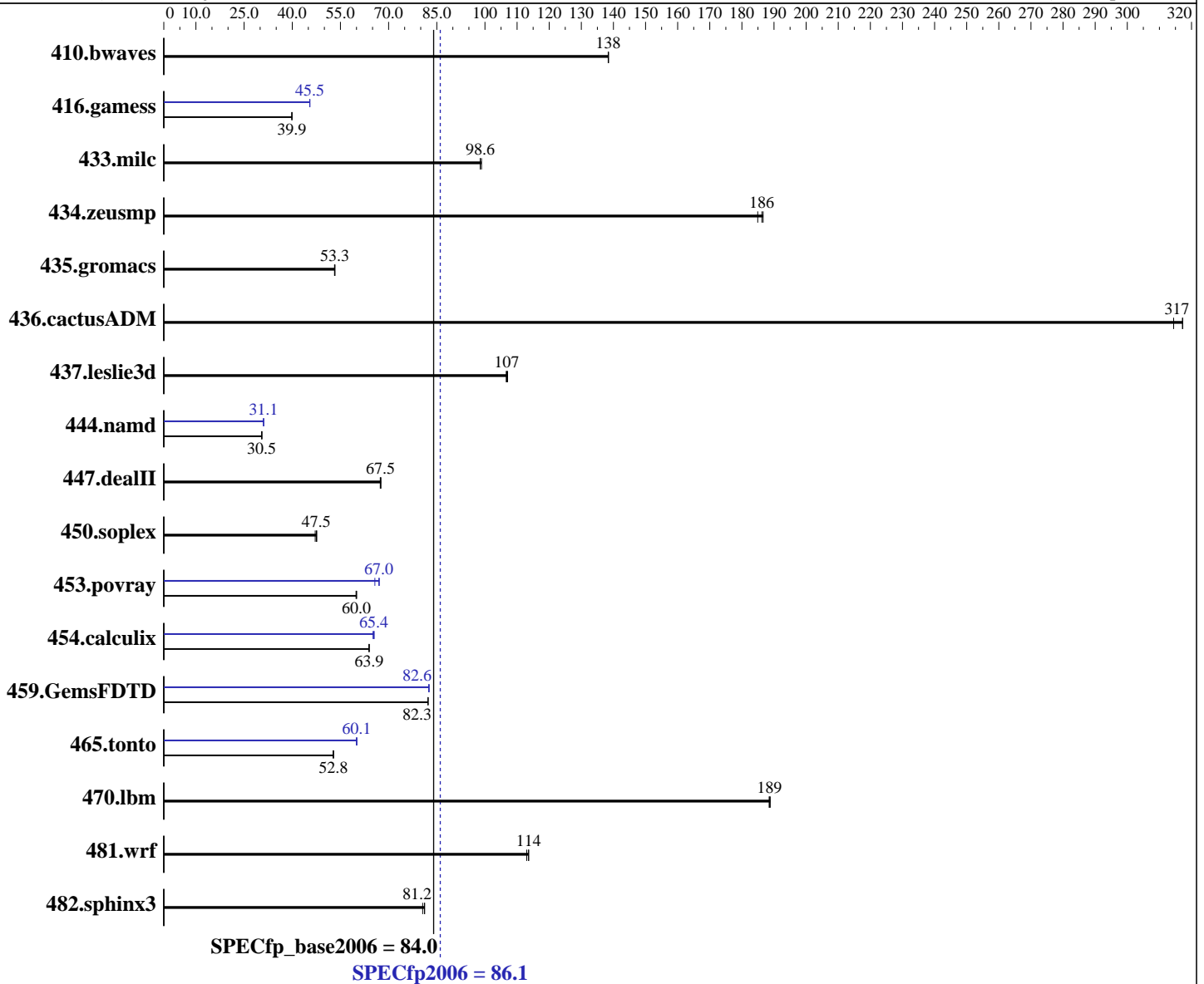
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Nov-2015

Hardware Availability: Feb-2016

Software Availability: Sep-2015



### Hardware

CPU Name: Intel Xeon E3-1240L v5  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 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

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### Software

Operating System: SUSE Linux Enterprise Server 12 (x86\_64)  
 Kernel 3.12.48-52.27-default  
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;  
 Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4  
 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 PC4-2133P-E)  
Disk Subsystem: 1 x SATA, 500 GB, 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	98.1	138	<b>98.2</b>	<b>138</b>	98.2	138	98.1	138	<b>98.2</b>	<b>138</b>	98.2	138
416.gamess	<b>491</b>	<b>39.9</b>	491	39.9	491	39.9	430	45.5	431	45.4	<b>431</b>	<b>45.5</b>
433.milc	93.2	98.5	92.8	98.9	<b>93.1</b>	<b>98.6</b>	93.2	98.5	92.8	98.9	<b>93.1</b>	<b>98.6</b>
434.zeusmp	48.8	187	49.2	185	<b>48.9</b>	<b>186</b>	48.8	187	49.2	185	<b>48.9</b>	<b>186</b>
435.gromacs	134	53.2	<b>134</b>	<b>53.3</b>	134	53.3	134	53.2	<b>134</b>	<b>53.3</b>	134	53.3
436.cactusADM	37.7	317	<b>37.7</b>	<b>317</b>	38.0	314	37.7	317	<b>37.7</b>	<b>317</b>	38.0	314
437.leslie3d	<b>88.0</b>	<b>107</b>	87.8	107	88.2	107	<b>88.0</b>	<b>107</b>	87.8	107	88.2	107
444.namd	263	30.5	263	30.5	<b>263</b>	<b>30.5</b>	<b>258</b>	<b>31.1</b>	258	31.0	258	31.1
447.dealII	169	67.6	<b>170</b>	<b>67.5</b>	170	67.4	169	67.6	<b>170</b>	<b>67.5</b>	170	67.4
450.soplex	177	47.1	<b>176</b>	<b>47.5</b>	175	47.6	177	47.1	<b>176</b>	<b>47.5</b>	175	47.6
453.povray	<b>88.7</b>	<b>60.0</b>	88.6	60.0	88.9	59.9	80.9	65.7	<b>79.5</b>	<b>67.0</b>	79.3	67.1
454.calculix	129	64.0	<b>129</b>	<b>63.9</b>	129	63.9	126	65.5	<b>126</b>	<b>65.4</b>	127	65.1
459.GemsFDTD	129	82.3	129	82.2	<b>129</b>	<b>82.3</b>	128	82.6	129	82.5	<b>128</b>	<b>82.6</b>
465.tonto	186	52.9	187	52.7	<b>186</b>	<b>52.8</b>	<b>164</b>	<b>60.1</b>	164	60.1	164	60.0
470.lbm	72.8	189	72.9	189	<b>72.9</b>	<b>189</b>	72.8	189	72.9	189	<b>72.9</b>	<b>189</b>
481.wrf	98.3	114	98.8	113	<b>98.3</b>	<b>114</b>	98.3	114	98.8	113	<b>98.3</b>	<b>114</b>
482.sphinx3	240	81.2	242	80.6	<b>240</b>	<b>81.2</b>	240	81.2	242	80.6	<b>240</b>	<b>81.2</b>

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 configuration:  
Sysinfo program /home/SPECcpu2006-RH72-ICCL6-update/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
running on TX1330M2 Wed Nov 11 15:00:27 2015

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

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### Platform Notes (Continued)

model name : Intel(R) Xeon(R) CPU E3-1240L v5 @ 2.10GHz

1 "physical id"s (chips)  
8 "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 0 1 2 3  
cache size : 8192 KB

From /proc/meminfo

MemTotal: 65902000 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

/usr/bin/lsb\_release -d

SUSE Linux Enterprise Server 12

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

SuSE-release:

SUSE Linux Enterprise Server 12 (x86\_64)  
VERSION = 12  
PATCHLEVEL = 0

# 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"  
VERSION\_ID="12"  
PRETTY\_NAME="SUSE Linux Enterprise Server 12"  
ID="sles"  
ANSI\_COLOR="0;32"  
CPE\_NAME="cpe:/o:suse:sles:12"

uname -a:

Linux TX1330M2 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014  
(9879bd4) x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 5 Nov 11 09:59

SPEC is set to: /home/SPECcpu2006-RH72-ICC16-update

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda3	xfs	237G	23G	215G	10%	/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.

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## Platform Notes (Continued)

BIOS FUJITSU // American Megatrends Inc. V5.0.0.11 R1.1.0 for D3373-A1x  
10/30/2015

Memory:

4x SK Hynix HMA82GU7MFR8N-TF 16 GB 2 rank 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,1,0"

LD\_LIBRARY\_PATH = "/home/SPECcpu2006-RH72-ICC16-update/libs/32:/home/SPECcpu2006-RH72-ICC16-update/libs/64:/home/SPECcpu2006-RH72-ICC16-update/sh"

OMP\_NUM\_THREADS = "4"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB  
memory using RedHat EL 7.1

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent\_hugepage/enabled

For information about Fujitsu please visit: <http://www.fujitsu.com>

## 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

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**Tested by:** Fujitsu

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## 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 -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: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

### C++ benchmarks:

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

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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

### Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -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:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2  
-inline-level=0 -opt-prefetch -parallel

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

### Benchmarks using both Fortran and C:

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## Peak Optimization Flags (Continued)

435.gromacs: basepeak = yes

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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

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

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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