



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = **71.3**

PRIMERGY TX1330 M2, Intel Pentium G4400, 3.30 GHz

SPECfp\_base2006 = **70.6**

CPU2006 license: 19

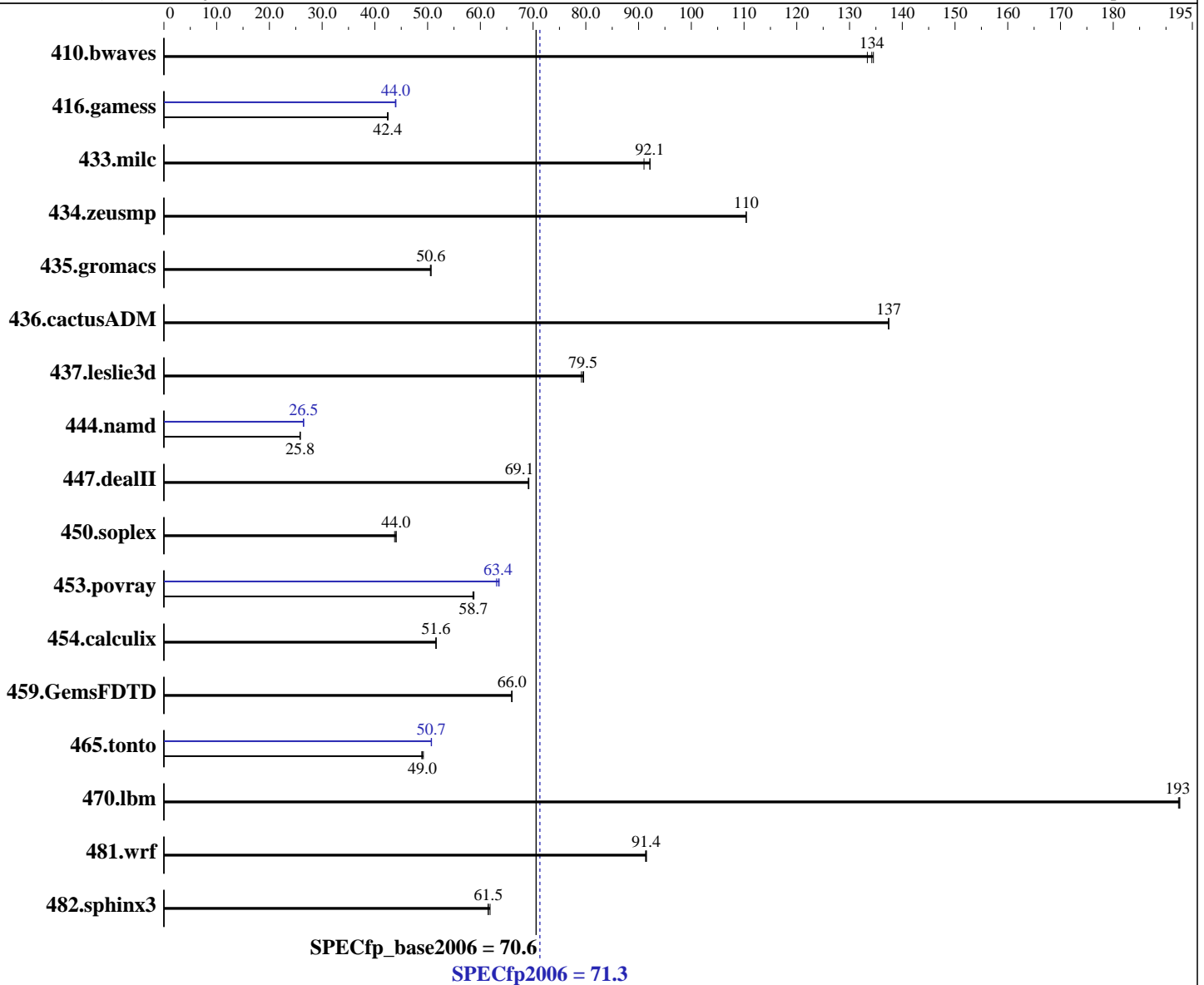
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2016

Hardware Availability: Feb-2016

Software Availability: Sep-2015



### Hardware

CPU Name: Intel Pentium G4400  
 CPU Characteristics:  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 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

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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: 3 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	102	133	<b>101</b>	<b>134</b>	101	135	102	133	<b>101</b>	<b>134</b>	101	135
416.gamess	<b>461</b>	<b>42.4</b>	461	42.5	462	42.4	445	44.0	446	43.9	<b>445</b>	<b>44.0</b>
433.milc	99.6	92.2	<b>99.6</b>	<b>92.1</b>	101	91.0	99.6	92.2	<b>99.6</b>	<b>92.1</b>	101	91.0
434.zeusmp	82.4	110	82.4	110	<b>82.4</b>	<b>110</b>	82.4	110	82.4	110	<b>82.4</b>	<b>110</b>
435.gromacs	<b>141</b>	<b>50.6</b>	141	50.7	141	50.5	<b>141</b>	<b>50.6</b>	141	50.7	141	50.5
436.cactusADM	<b>87.0</b>	<b>137</b>	87.0	137	86.9	137	<b>87.0</b>	<b>137</b>	87.0	137	86.9	137
437.leslie3d	118	79.6	<b>118</b>	<b>79.5</b>	119	79.2	118	79.6	<b>118</b>	<b>79.5</b>	119	79.2
444.namd	310	25.9	311	25.8	<b>311</b>	<b>25.8</b>	303	26.5	303	26.4	<b>303</b>	<b>26.5</b>
447.dealII	165	69.2	<b>165</b>	<b>69.1</b>	166	69.1	165	69.2	<b>165</b>	<b>69.1</b>	166	69.1
450.soplex	191	43.7	189	44.0	<b>190</b>	<b>44.0</b>	191	43.7	189	44.0	<b>190</b>	<b>44.0</b>
453.povray	90.5	58.8	<b>90.6</b>	<b>58.7</b>	90.8	58.6	84.4	63.0	83.7	63.6	<b>83.9</b>	<b>63.4</b>
454.calculix	160	51.6	160	51.6	<b>160</b>	<b>51.6</b>	160	51.6	160	51.6	<b>160</b>	<b>51.6</b>
459.GemsFDTD	<b>161</b>	<b>66.0</b>	161	65.9	161	66.0	<b>161</b>	<b>66.0</b>	161	65.9	161	66.0
465.tonto	200	49.2	<b>201</b>	<b>49.0</b>	201	48.9	194	50.7	<b>194</b>	<b>50.7</b>	194	50.7
470.lbm	71.3	193	71.4	192	<b>71.3</b>	<b>193</b>	71.3	193	71.4	192	<b>71.3</b>	<b>193</b>
481.wrf	122	91.5	122	91.3	<b>122</b>	<b>91.4</b>	122	91.5	122	91.3	<b>122</b>	<b>91.4</b>
482.sphinx3	317	61.5	315	61.8	<b>317</b>	<b>61.5</b>	317	61.5	315	61.8	<b>317</b>	<b>61.5</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/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
running on TX1330M2 Wed Jan 6 12:48:37 2016

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) Pentium(R) CPU G4400 @ 3.30GHz

1 "physical id"s (chips)

2 "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 : 2

siblings : 2

physical 0: cores 0 1

cache size : 3072 KB

From /proc/meminfo

MemTotal: 65902840 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 Jan 6 12:43

SPEC is set to: /home/SPECcpu2006

Filesystem Type Size Used Avail Use% Mounted on

/dev/sda3 xfs 237G 15G 223G 7% /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/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"

OMP\_NUM\_THREADS = "2"

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.deallI: -DSPEC\_CPU\_LP64

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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:  
 -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:  
 -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:  
 -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:  
 -xSSE4.2 -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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**Test sponsor:** Fujitsu

**Tested by:** Fujitsu

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**Hardware Availability:** Feb-2016

**Software Availability:** Sep-2015

## Peak Optimization Flags

### C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

### C++ benchmarks:

444.namd: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: basepeak = yes

465.tonto: -xSSE4.2(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:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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## Peak Optimization Flags (Continued)

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).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Jan 26 15:12:34 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 26 January 2016.