



# SPEC® CINT2006 Result

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## Fujitsu

**SPECint®2006 = 54.9**

PRIMERGY TX1330 M2, Intel Pentium G4400, 3.30 GHz

**SPECint\_base2006 = 53.1**

CPU2006 license: 19

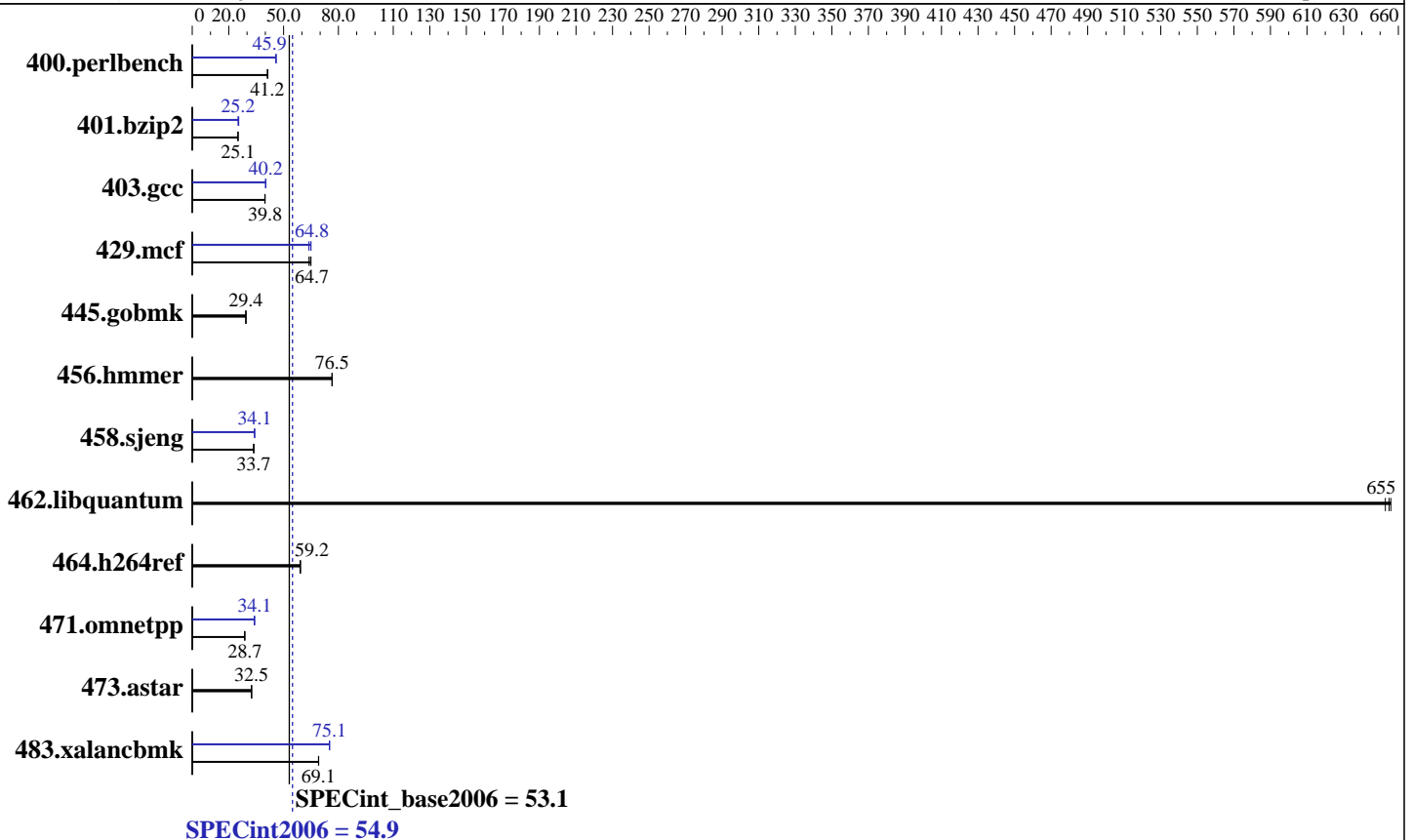
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Dec-2015

Hardware Availability: Feb-2016

Software Availability: Sep-2015



### Hardware

CPU Name: Intel Pentium G4400  
 CPU Characteristics: 3300  
 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  
 L3 Cache: 3 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 32 GB (2 x 16 GB 2Rx8 PC4-2133P-E)  
 Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM  
 Other Hardware: None

### 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  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	237	41.2	<u>237</u>	<u>41.2</u>	237	41.2	213	45.8	213	45.9	<u>213</u>	<u>45.9</u>
401.bzip2	<u>385</u>	<u>25.1</u>	385	25.1	386	25.0	379	25.4	<u>383</u>	<u>25.2</u>	383	25.2
403.gcc	202	39.9	<u>202</u>	<u>39.8</u>	203	39.7	200	40.2	200	40.2	<u>200</u>	<u>40.2</u>
429.mcf	<u>141</u>	<u>64.7</u>	143	63.9	140	65.0	143	63.8	140	65.0	<u>141</u>	<u>64.8</u>
445.gobmk	<u>357</u>	<u>29.4</u>	357	29.4	357	29.4	<u>357</u>	<u>29.4</u>	357	29.4	357	29.4
456.hammer	<u>122</u>	<u>76.5</u>	122	76.5	122	76.5	<u>122</u>	<u>76.5</u>	122	76.5	122	76.5
458.sjeng	360	33.6	<u>359</u>	<u>33.7</u>	359	33.7	<u>355</u>	<u>34.1</u>	354	34.1	355	34.1
462.libquantum	31.6	656	<u>31.6</u>	<u>655</u>	31.7	653	31.6	656	<u>31.6</u>	<u>655</u>	31.7	653
464.h264ref	374	59.2	<u>374</u>	<u>59.2</u>	375	59.0	374	59.2	<u>374</u>	<u>59.2</u>	375	59.0
471.omnetpp	217	28.8	<u>217</u>	<u>28.7</u>	218	28.7	<u>183</u>	<u>34.1</u>	184	33.9	183	34.1
473.astar	<u>216</u>	<u>32.5</u>	216	32.4	216	32.5	<u>216</u>	<u>32.5</u>	216	32.4	216	32.5
483.xalancbmk	99.9	69.1	<u>99.8</u>	<u>69.1</u>	99.7	69.2	<u>91.9</u>	<u>75.1</u>	91.7	75.2	92.0	75.0

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.

## 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 Thu Dec 10 17:07:52 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  
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

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## Platform Notes (Continued)

cache size : 3072 KB

From /proc/meminfo

MemTotal: 32807176 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 Dec 9 15:53

SPEC is set to: /home/SPECcpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda3	xfs	237G	9.5G	228G	4%	/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 R1.1.0 for D3373-A1x 10/30/2015

Memory:

2x Not Specified Not Specified

2x SK Hynix HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)



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## General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,scatter"

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

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
471.omnetpp: -DSPEC\_CPU\_LP64  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64



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## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

C++ benchmarks (except as noted below):

icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32

401.bzip2: -DSPEC\_CPU\_LP64

403.gcc: -DSPEC\_CPU\_LP64

429.mcf: -DSPEC\_CPU\_LP64

445.gobmk: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

464.h264ref: -DSPEC\_CPU\_LP64

471.omnetpp: -D\_FILE\_OFFSET\_BITS=64

473.astar: -DSPEC\_CPU\_LP64

483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -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) -opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div -par-num-threads=1(pass 1)  
-prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alias

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## Peak Optimization Flags (Continued)

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-alloc  
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-auto-p32

445.gobmk: basepeak = yes

456.hmmer: basepeak = yes

458.sjeng: -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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -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) -opt-ra-region-strategy=block  
-ansi-alias -Wl,-z,muldefs -L/sh -lsmarheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmarheap

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

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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