



# SPEC® CINT2006 Result

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## Fujitsu

PRIMERGY TX1320 M2, Intel Xeon E3-1230 v5, 3.40 GHz

SPECint®\_rate2006 = 254

SPECint\_rate\_base2006 = 244

CPU2006 license: 19

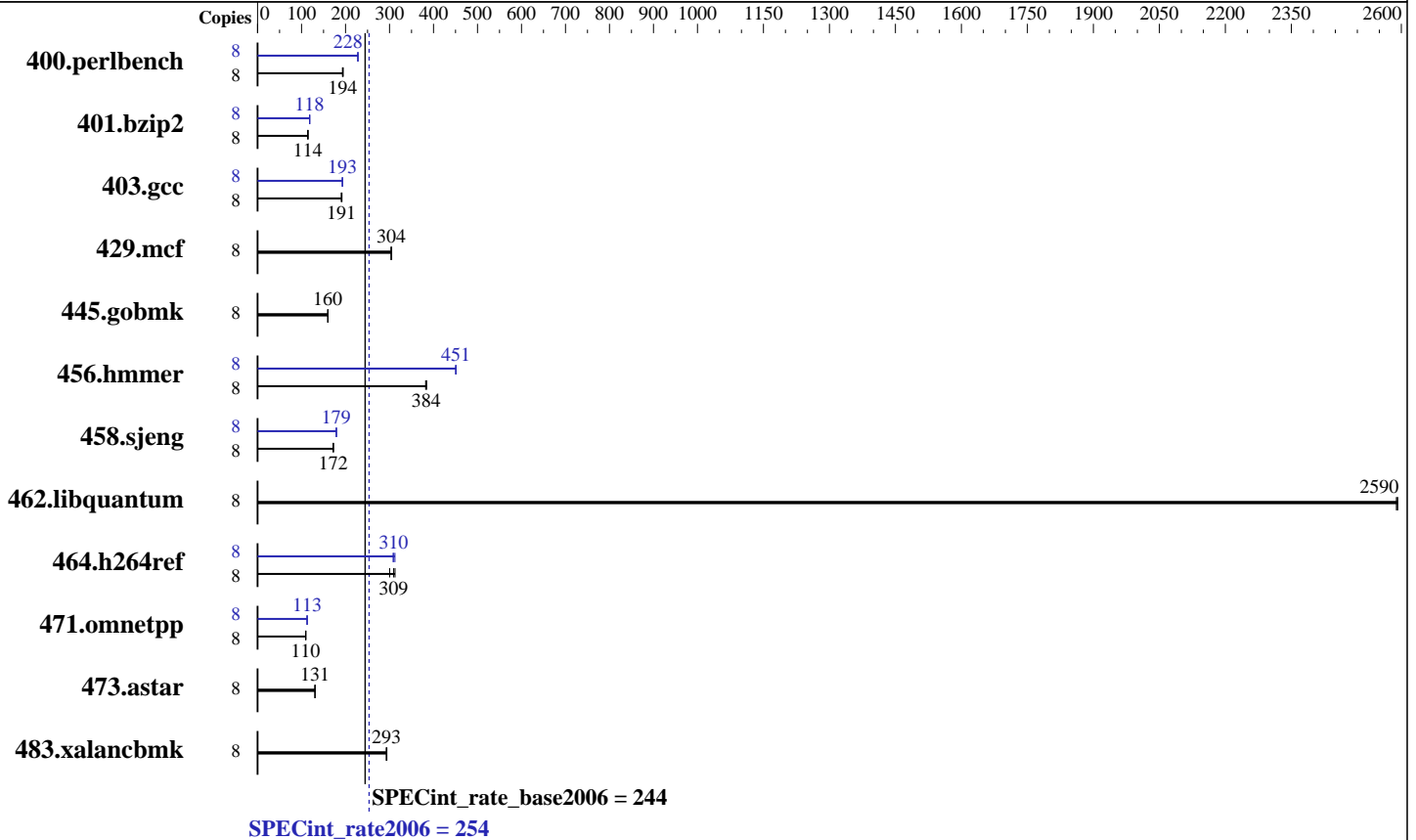
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Nov-2015

Hardware Availability: Feb-2016

Software Availability: Sep-2015



### Hardware

CPU Name: Intel Xeon E3-1230 v5  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 3400  
 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  
 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

### 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: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	<b>404</b>	<b>194</b>	405	193	401	195	8	<b>343</b>	<b>228</b>	342	228	343	228
401.bzip2	8	678	114	671	115	<b>675</b>	<b>114</b>	8	650	119	<b>652</b>	<b>118</b>	653	118
403.gcc	8	336	192	<b>337</b>	<b>191</b>	338	190	8	334	193	<b>334</b>	<b>193</b>	333	193
429.mcf	8	239	305	241	303	<b>240</b>	<b>304</b>	8	239	305	241	303	<b>240</b>	<b>304</b>
445.gobmk	8	<b>525</b>	<b>160</b>	525	160	525	160	8	<b>525</b>	<b>160</b>	525	160	525	160
456.hammer	8	194	384	<b>195</b>	<b>384</b>	195	382	8	165	451	<b>166</b>	<b>451</b>	166	450
458.sjeng	8	<b>563</b>	<b>172</b>	563	172	560	173	8	<b>541</b>	<b>179</b>	541	179	539	179
462.libquantum	8	64.0	2590	<b>64.0</b>	<b>2590</b>	64.0	2590	8	64.0	2590	<b>64.0</b>	<b>2590</b>	64.0	2590
464.h264ref	8	567	313	<b>572</b>	<b>309</b>	590	300	8	567	312	<b>572</b>	<b>310</b>	575	308
471.omnetpp	8	457	109	<b>456</b>	<b>110</b>	455	110	8	<b>444</b>	<b>113</b>	443	113	445	112
473.astar	8	431	130	<b>429</b>	<b>131</b>	429	131	8	431	130	<b>429</b>	<b>131</b>	429	131
483.xalancbmk	8	188	294	<b>188</b>	<b>293</b>	189	293	8	188	294	<b>188</b>	<b>293</b>	189	293

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

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## 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 TX1320M2 Mon Nov 23 16:25:33 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) Xeon(R) CPU E3-1230 v5 @ 3.40GHz  
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

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### Platform Notes (Continued)

```
siblings : 8
physical 0: cores 0 1 2 3
cache size : 8192 KB
```

```
From /proc/meminfo
MemTotal:      65906076 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 TX1320M2 3.12.48-52.27-default #1 SMP Mon Oct 5 10:08:10 UTC 2015
(314f0e3) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 5 Nov 23 15:59
```

```
SPEC is set to: /home/SPECcpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   1.6T  3.9G  1.6T   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 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)



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## General Notes

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

LD\_LIBRARY\_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"

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

C++ benchmarks:

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

## Base Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -D\_FILE\_OFFSET\_BITS=64  
403.gcc: -D\_FILE\_OFFSET\_BITS=64  
429.mcf: -D\_FILE\_OFFSET\_BITS=64  
445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
456.hmmer: -D\_FILE\_OFFSET\_BITS=64  
458.sjeng: -D\_FILE\_OFFSET\_BITS=64  
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
473.astar: -D\_FILE\_OFFSET\_BITS=64  
483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap



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## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

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

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

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

## Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
403.gcc: -D\_FILE\_OFFSET\_BITS=64  
429.mcf: -D\_FILE\_OFFSET\_BITS=64  
445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
456.hmmer: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
458.sjeng: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
473.astar: -D\_FILE\_OFFSET\_BITS=64  
483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -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) -auto-ilp32

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## Peak Optimization Flags (Continued)

401.bzip2: -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) -opt-prefetch  
-auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: basepeak = yes

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -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  
-auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -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  
-ansi-alias

C++ benchmarks:

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

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## 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>



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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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