



# SPEC® CFP2006 Result

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## Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2667 v4, 3.20 GHz

SPECfp®2006 = 127

SPECfp\_base2006 = 123

CPU2006 license: 19

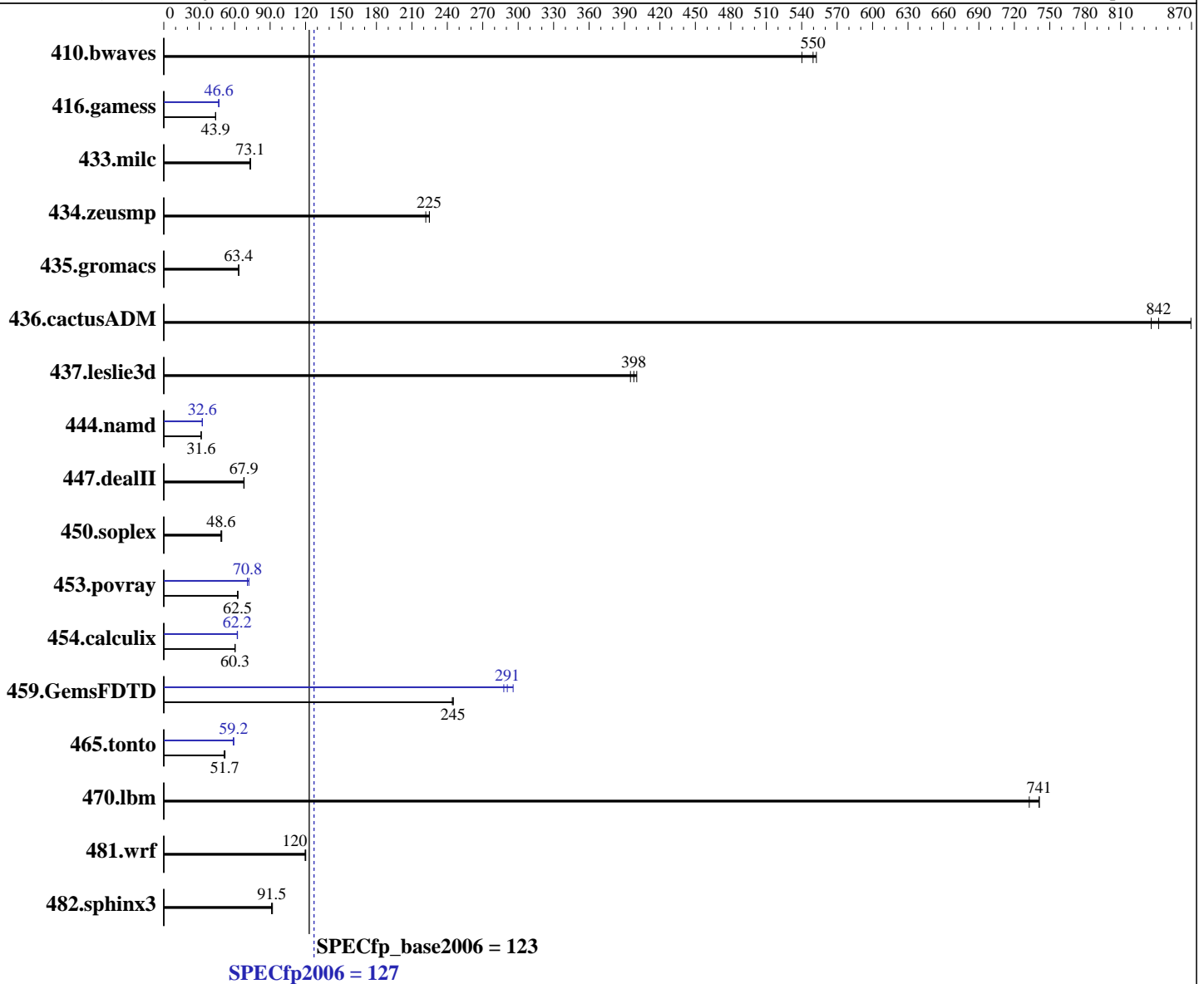
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Apr-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015



Hardware	Software
CPU Name: Intel Xeon E5-2667 v4	Operating System: SUSE Linux Enterprise Server 12 SP1 (x86_64)
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz	Kernel 3.12.49-11-default
CPU MHz: 3200	Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;
FPU: Integrated	Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core	Auto Parallel: Yes
CPU(s) orderable: 1,2 chip	File System: xfs
Primary Cache: 32 KB I + 32 KB D on chip per core	System State: Run level 3 (multi-user)
Secondary Cache: 256 KB I+D on chip per core	

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L3 Cache: 25 MB I+D on chip per chip  
Other Cache: None  
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)  
Disk Subsystem: 1 x SATA, 1000 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	25.2	540	<u>24.7</u>	<u>550</u>	24.6	552	25.2	540	<u>24.7</u>	<u>550</u>	24.6	552
416.gamess	<u>446</u>	<u>43.9</u>	447	43.8	445	44.0	420	46.6	422	46.4	<u>420</u>	<u>46.6</u>
433.milc	126	73.0	<u>126</u>	<u>73.1</u>	125	73.5	126	73.0	<u>126</u>	<u>73.1</u>	125	73.5
434.zeusmp	40.5	225	<u>40.5</u>	<u>225</u>	41.0	222	40.5	225	<u>40.5</u>	<u>225</u>	41.0	222
435.gromacs	113	63.3	112	63.5	<u>113</u>	<u>63.4</u>	113	63.3	112	63.5	<u>113</u>	<u>63.4</u>
436.cactusADM	13.7	870	14.3	836	<u>14.2</u>	<u>842</u>	13.7	870	14.3	836	<u>14.2</u>	<u>842</u>
437.leslie3d	23.8	395	<u>23.6</u>	<u>398</u>	23.5	400	23.8	395	<u>23.6</u>	<u>398</u>	23.5	400
444.namd	254	31.6	<u>253</u>	<u>31.6</u>	253	31.6	246	32.6	246	32.6	<u>246</u>	<u>32.6</u>
447.dealII	168	68.0	169	67.7	<u>168</u>	<u>67.9</u>	168	68.0	169	67.7	<u>168</u>	<u>67.9</u>
450.soplex	<u>172</u>	<u>48.6</u>	170	49.1	172	48.4	<u>172</u>	<u>48.6</u>	170	49.1	172	48.4
453.povray	<u>85.1</u>	<u>62.5</u>	85.2	62.4	84.7	62.8	75.1	70.8	<u>75.1</u>	<u>70.8</u>	73.8	72.1
454.calculix	137	60.4	137	60.2	<u>137</u>	<u>60.3</u>	<u>133</u>	<u>62.2</u>	132	62.4	133	62.2
459.GemsFDTD	<u>43.3</u>	<u>245</u>	43.3	245	43.4	244	35.9	296	36.9	288	<u>36.5</u>	<u>291</u>
465.tonto	193	51.1	190	51.8	<u>190</u>	<u>51.7</u>	166	59.2	167	58.8	<u>166</u>	<u>59.2</u>
470.lbm	18.5	741	<u>18.5</u>	<u>741</u>	18.8	733	18.5	741	<u>18.5</u>	<u>741</u>	18.8	733
481.wrf	<u>93.0</u>	<u>120</u>	93.0	120	93.4	120	<u>93.0</u>	<u>120</u>	93.0	120	93.4	120
482.sphinx3	<u>213</u>	<u>91.5</u>	212	92.0	214	91.2	<u>213</u>	<u>91.5</u>	212	92.0	214	91.2

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:  
Energy Performance = Performance  
Utilization Profile = Unbalanced  
QPI snoop mode: Home Snoop  
COD Enable = Disabled, Early Snoop = Disabled, Home Snoop Dir OSB = Disabled  
CPU ClE Support = Disabled  
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
running on RX2530M2 Wed Apr 6 12:28:55 2016

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### Platform Notes (Continued)

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 E5-2667 v4 @ 3.20GHz
 2 "physical id"s (chips)
 32 "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    : 8
  siblings     : 16
  physical 0   : cores 0 2 3 4 8 10 11 12
  physical 1   : cores 0 2 3 4 8 10 11 12
cache size     : 25600 KB
```

```
From /proc/meminfo
MemTotal:      264326504 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP1
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# 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-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"
```

```
uname -a:
Linux RX2530M2 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Apr 6 12:27 last=5
```

```
SPEC is set to: /home/SPECcpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   890G  61G  830G   7% /home
```

Additional information from dmidecode:

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### Platform Notes (Continued)

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 R1.6.0 for D3279-B1x 03/11/2016

Memory:  
16x Micron 36ASF2G72PZ-2G3A3 16 GB 2 rank 2400 MHz  
8x NO DIMM NO DIMM

(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 = "16"
```

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

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## Base Portability Flags (Continued)

```
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
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



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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: -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

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## Peak Optimization Flags (Continued)

465.tonto (continued):  
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

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.20160517.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.20160517.xml>

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

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