



# SPEC® CFP2006 Result

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## Fujitsu

PRIMERGY RX1330 M2, Intel Xeon E3-1225 v5, 3.30 GHz

SPECfp®\_rate2006 = 179

SPECfp\_rate\_base2006 = 175

CPU2006 license: 19

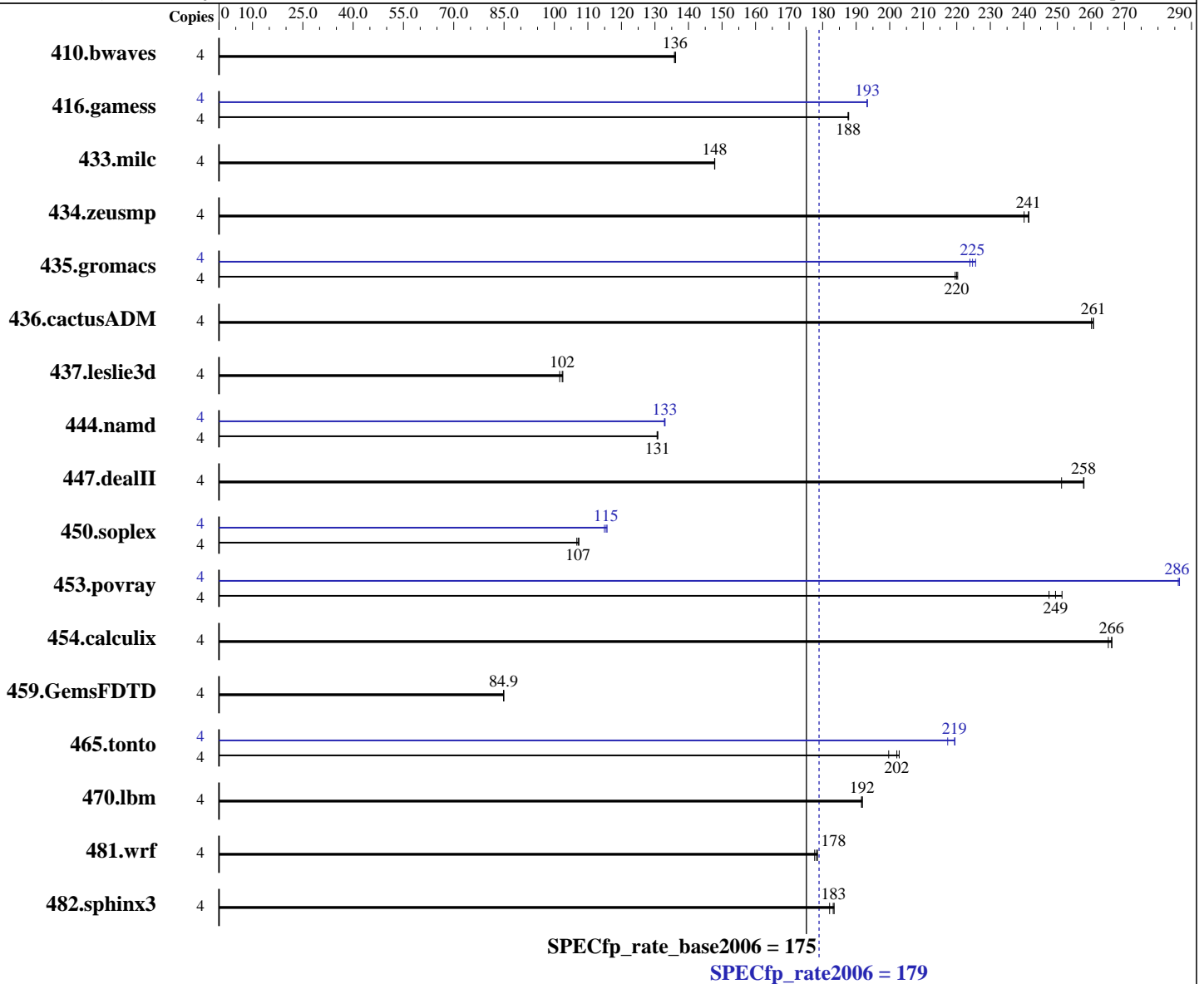
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2016

Hardware Availability: Feb-2016

Software Availability: Sep-2015



### Hardware

CPU Name: Intel Xeon E3-1225 v5  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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

Continued on next page

### Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo)  
 Kernel 3.10.0-327.el7.x86\_64  
 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: No  
 File System: ext4

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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

System State: Run level 3 (multi-user)  
Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	400	136	399	136	<b><u>400</u></b>	<b><u>136</u></b>	4	400	136	399	136	<b><u>400</u></b>	<b><u>136</u></b>
416.gamess	4	417	188	<b><u>417</u></b>	<b><u>188</u></b>	417	188	4	<b><u>405</u></b>	<b><u>193</u></b>	405	193	405	193
433.milc	4	248	148	248	148	<b><u>248</u></b>	<b><u>148</u></b>	4	248	148	248	148	<b><u>248</u></b>	<b><u>148</u></b>
434.zeusmp	4	152	240	<b><u>151</u></b>	<b><u>241</u></b>	151	242	4	152	240	<b><u>151</u></b>	<b><u>241</u></b>	151	242
435.gromacs	4	130	220	130	220	<b><u>130</u></b>	<b><u>220</u></b>	4	127	226	128	224	<b><u>127</u></b>	<b><u>225</u></b>
436.cactusADM	4	184	260	<b><u>183</u></b>	<b><u>261</u></b>	183	261	4	184	260	<b><u>183</u></b>	<b><u>261</u></b>	183	261
437.leslie3d	4	367	103	370	102	<b><u>367</u></b>	<b><u>102</u></b>	4	367	103	370	102	<b><u>367</u></b>	<b><u>102</u></b>
444.namd	4	<b><u>245</u></b>	<b><u>131</u></b>	246	131	245	131	4	241	133	<b><u>241</u></b>	<b><u>133</u></b>	242	133
447.dealII	4	177	258	<b><u>178</u></b>	<b><u>258</u></b>	182	251	4	177	258	<b><u>178</u></b>	<b><u>258</u></b>	182	251
450.soplex	4	<b><u>312</u></b>	<b><u>107</u></b>	313	107	311	107	4	<b><u>289</u></b>	<b><u>115</u></b>	290	115	288	116
453.povray	4	<b><u>85.3</u></b>	<b><u>249</u></b>	86.0	248	84.7	251	4	<b><u>74.3</u></b>	<b><u>286</u></b>	74.4	286	74.3	286
454.calculix	4	<b><u>124</u></b>	<b><u>266</u></b>	124	266	124	265	4	<b><u>124</u></b>	<b><u>266</u></b>	124	266	124	265
459.GemsFDTD	4	<b><u>500</u></b>	<b><u>84.9</u></b>	500	84.9	500	84.9	4	<b><u>500</u></b>	<b><u>84.9</u></b>	500	84.9	500	84.9
465.tonto	4	<b><u>195</u></b>	<b><u>202</u></b>	197	200	194	203	4	181	217	179	219	<b><u>179</u></b>	<b><u>219</u></b>
470.lbm	4	287	192	286	192	<b><u>287</u></b>	<b><u>192</u></b>	4	287	192	286	192	<b><u>287</u></b>	<b><u>192</u></b>
481.wrf	4	250	178	<b><u>251</u></b>	<b><u>178</u></b>	252	178	4	250	178	<b><u>251</u></b>	<b><u>178</u></b>	252	178
482.sphinx3	4	<b><u>426</u></b>	<b><u>183</u></b>	428	182	425	183	4	<b><u>426</u></b>	<b><u>183</u></b>	428	182	425	183

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

Continued on next page



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### Platform Notes (Continued)

running on RX1330M2 Fri Jan 15 18:17:40 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
model name : Intel(R) Xeon(R) CPU E3-1225 v5 @ 3.30GHz
 1 "physical id"s (chips)
 4 "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  : 4
  physical 0: cores 0 1 2 3
  cache size : 8192 KB
```

```
From /proc/meminfo
MemTotal:      65724872 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server
```

```
uname -a:
Linux RX1330M2 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 5 Jan 15 18:16

```
SPEC is set to: /home/SPECcpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/rhel_tx1330m2-home xfs      865G   14G  852G   2% /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.

Continued on next page



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## Platform Notes (Continued)

BIOS FUJITSU // American Megatrends Inc. V5.0.0.11 R1.4.0 for D3375-A1x  
11/18/2015

Memory:  
4x Samsung M391A2K43BB1-CPB 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:

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 -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  
450.soplex: -DSPEC\_CPU\_LP64

Continued on next page



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## Base Portability Flags (Continued)

```
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 -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

## Peak Compiler Invocation

C benchmarks:

```
icc -m64
```

C++ benchmarks (except as noted below):

```
icpc -m64
```

```
450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

Fortran benchmarks:

```
ifort -m64
```

Benchmarks using both Fortran and C:

```
icc -m64 ifort -m64
```



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## Peak 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
450.soplex: -D_FILE_OFFSET_BITS=64
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

```

## 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) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -fno-alias -auto-ilp32
447.dealII: basepeak = yes
450.soplex: -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) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -opt-malloc-options=3
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) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -unroll4 -ansi-alias

```

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## Peak Optimization Flags (Continued)

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: basepeak = yes

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) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -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) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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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