



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2699 v4, 2.20 GHz

SPECfp[®]2006 = **126**

SPECfp_base2006 = **118**

CPU2006 license: 19

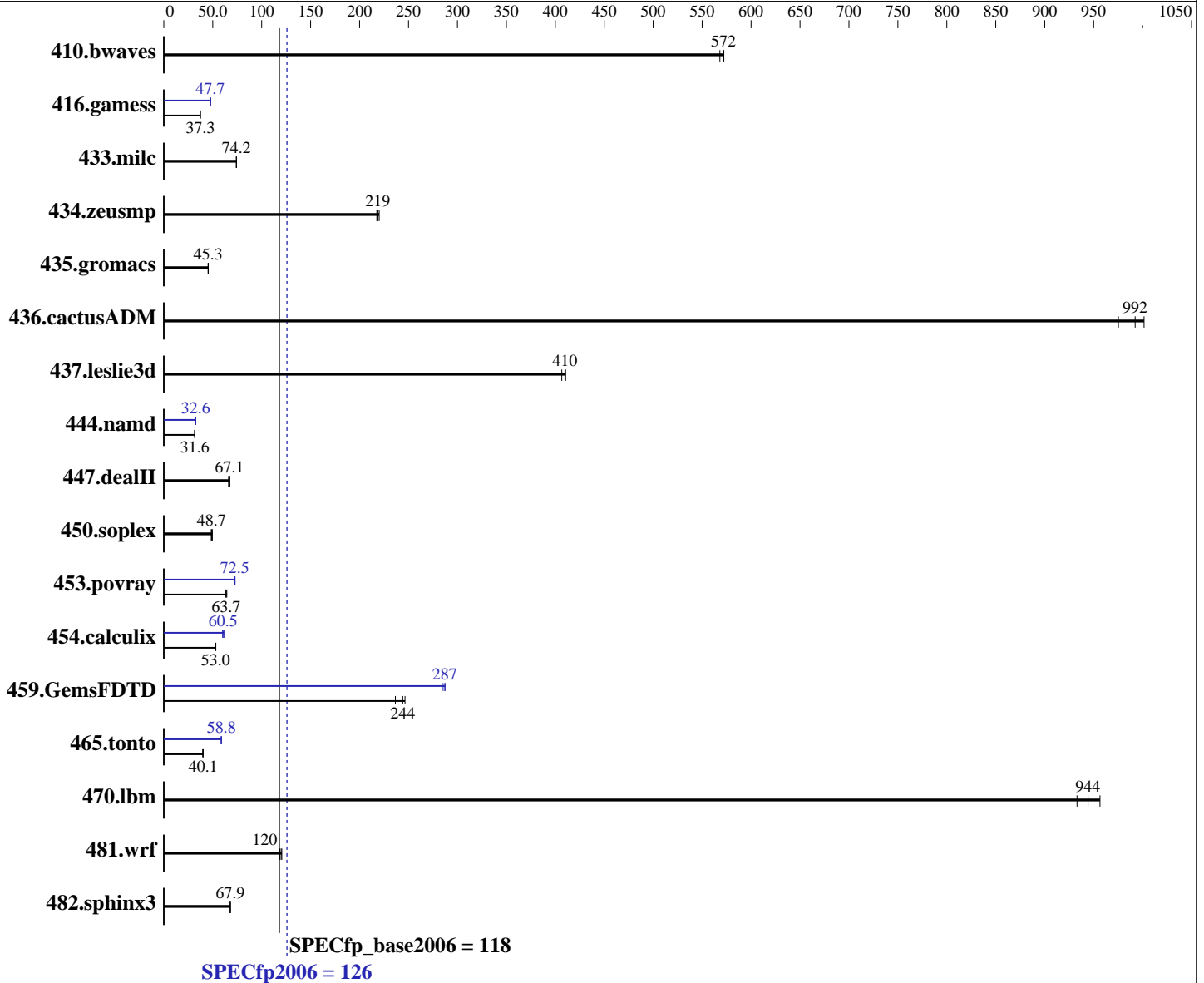
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Apr-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015



Hardware

CPU Name: Intel Xeon E5-2699 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 44 cores, 2 chips, 22 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 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: SUSE Linux Enterprise Server 12 SP1 (x86_64)
 Kernel 3.12.49-11-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: xfs
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2699 v4, 2.20 GHz

SPECfp2006 = **126**

SPECfp_base2006 = **118**

CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Apr-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015

L3 Cache: 55 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	<u>23.8</u>	<u>572</u>	23.8	572	23.9	568	<u>23.8</u>	<u>572</u>	23.8	572	23.9	568
416.gamess	527	37.1	<u>525</u>	<u>37.3</u>	524	37.4	<u>411</u>	<u>47.7</u>	411	47.7	411	47.7
433.milc	<u>124</u>	<u>74.2</u>	124	74.3	124	74.1	<u>124</u>	<u>74.2</u>	124	74.3	124	74.1
434.zeusmp	41.8	218	41.4	220	<u>41.6</u>	<u>219</u>	41.8	218	41.4	220	<u>41.6</u>	<u>219</u>
435.gromacs	158	45.3	157	45.5	<u>158</u>	<u>45.3</u>	158	45.3	157	45.5	<u>158</u>	<u>45.3</u>
436.cactusADM	11.9	1000	<u>12.0</u>	<u>992</u>	12.3	975	11.9	1000	<u>12.0</u>	<u>992</u>	12.3	975
437.leslie3d	<u>22.9</u>	<u>410</u>	23.1	407	22.9	411	<u>22.9</u>	<u>410</u>	23.1	407	22.9	411
444.namd	254	31.6	<u>254</u>	<u>31.6</u>	254	31.6	<u>246</u>	<u>32.6</u>	246	32.6	246	32.6
447.dealII	<u>170</u>	<u>67.1</u>	173	66.1	170	67.4	<u>170</u>	<u>67.1</u>	173	66.1	170	67.4
450.soplex	<u>171</u>	<u>48.7</u>	172	48.5	168	49.6	<u>171</u>	<u>48.7</u>	172	48.5	168	49.6
453.povray	82.6	64.4	<u>83.5</u>	<u>63.7</u>	83.9	63.4	<u>73.4</u>	<u>72.5</u>	73.4	72.4	73.0	72.8
454.calculix	<u>156</u>	<u>53.0</u>	156	52.8	155	53.2	137	60.1	<u>136</u>	<u>60.5</u>	134	61.5
459.GemsFDTD	44.8	237	43.1	246	<u>43.5</u>	<u>244</u>	37.2	285	<u>37.0</u>	<u>287</u>	36.9	287
465.tonto	<u>245</u>	<u>40.1</u>	245	40.1	247	39.8	168	58.5	167	58.8	<u>167</u>	<u>58.8</u>
470.lbm	14.4	956	<u>14.6</u>	<u>944</u>	14.7	933	14.4	956	<u>14.6</u>	<u>944</u>	14.7	933
481.wrf	<u>93.2</u>	<u>120</u>	94.3	118	92.7	121	<u>93.2</u>	<u>120</u>	94.3	118	92.7	121
482.sphinx3	287	68.0	<u>287</u>	<u>67.9</u>	288	67.7	<u>287</u>	<u>68.0</u>	<u>287</u>	<u>67.9</u>	288	67.7

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 Directory Snoop with OSB
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 Thu Apr 7 08:08:32 2016

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2699 v4, 2.20 GHz

SPECfp2006 = 126

SPECfp_base2006 = 118

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

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 E5-2699 v4 @ 2.20GHz
 2 "physical id"s (chips)
 88 "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      : 22
  siblings       : 44
  physical 0:    cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28
  physical 1:    cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28
cache size      : 56320 KB
```

```
From /proc/meminfo
MemTotal:        264319656 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 7 08:04 last=5
```

```
SPEC is set to: /home/SPECcpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
Continued on next page
```



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2699 v4, 2.20 GHz

SPECfp2006 = 126

SPECfp_base2006 = 118

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

Platform Notes (Continued)

/dev/sda3 xfs 890G 62G 828G 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.

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 = "44"

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2699 v4, 2.20 GHz

SPECfp2006 = **126**

SPECfp_base2006 = **118**

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

Base Portability Flags (Continued)

```

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
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



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2699 v4, 2.20 GHz

SPECfp2006 = 126

SPECfp_base2006 = 118

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2699 v4, 2.20 GHz

SPECfp2006 = 126

SPECfp_base2006 = 118

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

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.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>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Jun 28 17:33:36 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 June 2016.