# SPEC® CFP2006 Result

## Fujitsu

**PRIMERGY CX2550 M2, Intel Xeon E5-2689 v4, 3.10 GHz**

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<th>SPECfp&lt;sup&gt;®&lt;/sup&gt;2006</th>
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<tr>
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**CPU2006 license:** 19

**Test sponsor:** Fujitsu

**Tested by:** Fujitsu

**Test date:** Aug-2016

**Hardware Availability:** Apr-2016

**Software Availability:** Sep-2015

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**CPU Name:** Intel Xeon E5-2689 v4

**CPU Characteristics:** Intel Turbo Boost Technology up to 3.80 GHz

**CPU MHz:** 3100

**FPU:** Integrated

**CPU(s) enabled:** 20 cores, 2 chips, 10 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

**Operating System:** SUSE Linux Enterprise Server 12 SP1 (x86_64)

**Compiler:** C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;

**Auto Parallel:** Yes

**File System:** xfs

**System State:** Run level 3 (multi-user)

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<th>Result</th>
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<tr>
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<td>340</td>
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<td>210</td>
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<td>435.gromacs</td>
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<tr>
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<td>437.leslie3d</td>
<td>294</td>
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**SPECfp<sup>®</sup>2006 = 124**

**SPECfp_base2006 = 119**

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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  

**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 C1E Support = Disabled  

Sysinfo program: 
/home/SPECcpu2006/config/sysinfo.rev6914  
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1  
running on CX2550M2 Mon Aug 1 09:00:30 2016

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### Results Table

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<tr>
<th>Benchmark</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
Fujitsu
PRIMERGY CX2550 M2, Intel Xeon E5-2689 v4, 3.10 GHz

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

SPECfp2006 = 124
SPECfp_base2006 = 119

Test date: Aug-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 E5-2689 v4 @ 3.10GHz
2 "physical id"s (chips)
40 "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 : 10
siblings : 20
physical 0: cores 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB

From /proc/meminfo
MemTotal: 264385396 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:
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Aug 1 08:59 last=5

SPEC is set to: /home/SPECcpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 890G 75G 815G 9% /home

Additional information from dmidecode:
Continued on next page
SPEC CFP2006 Result

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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 R1.4.0 for D3343-B1x 03/17/2016
Memory:
16x Hyundai Electronics (Hynix) HMA42GR7AFR4N-UH 16 GB 2 rank 2400 MHz

(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 = "20"

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

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<tr>
<td>481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>482.sphinx3: -DSPEC_CPU_LP64</td>
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**Base Optimization Flags**

For C benchmarks:
- `-xCORE-AVX2`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-parallel`  
- `-opt-prefetch`  
- `-ansi-alias`

For C++ benchmarks:
- `-xCORE-AVX2`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-opt-prefetch`  
- `-ansi-alias`

For Fortran benchmarks:
- `-xCORE-AVX2`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-parallel`  
- `-opt-prefetch`  
- `-ansi-alias`

For benchmarks using both Fortran and C:
- `-xCORE-AVX2`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-parallel`  
- `-opt-prefetch`  
- `-ansi-alias`

**Peak Compiler Invocation**

For C benchmarks:
- `icc -m64`

For C++ benchmarks:
- `icpc -m64`

For Fortran benchmarks:
- `ifort -m64`

For 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

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-BDW-RevB.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-BDW-RevB.xml

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For other inquiries, please contact webmaster@spec.org.

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