## SPEC® CFP2006 Result

**Fujitsu**

PRIMERGY CX2550 M2, Intel Xeon E5-2643 v4, 3.40 GHz

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>122</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>118</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2643 v4</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.70 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>3400</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>12 cores, 2 chips, 6 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 12 SP1 (x86_64)</td>
</tr>
<tr>
<td></td>
<td>Kernel 3.12.49-11-default</td>
</tr>
<tr>
<td>Compiler</td>
<td>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</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>xfs</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
</tbody>
</table>

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

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PRIMERGY CX2550 M2, Intel Xeon E5-2643 v4, 3.40 GHz

| SPECf2006 = | 122 |
| SPECf_base2006 = | 118 |

**CPU2006 license:** 19

Test sponsor: Fujitsu

Tested by: Fujitsu

L3 Cache: 20 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**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>27.1</td>
<td>502</td>
<td>26.8</td>
<td>507</td>
<td>26.8</td>
<td>507</td>
<td>27.1</td>
<td>502</td>
<td>26.8</td>
<td>507</td>
</tr>
<tr>
<td>416.gamess</td>
<td>440</td>
<td>44.5</td>
<td>438</td>
<td>44.7</td>
<td>438</td>
<td>44.7</td>
<td>409</td>
<td>47.9</td>
<td>408</td>
<td>47.9</td>
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<tr>
<td>433.milc</td>
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<td>75.1</td>
<td>122</td>
<td>75.2</td>
<td>122</td>
<td>75.4</td>
<td>122</td>
<td>75.1</td>
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<td>75.2</td>
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<tr>
<td>434.zeusmp</td>
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<td>42.0</td>
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<td>435.gromacs</td>
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<td>64.8</td>
<td>110</td>
<td>64.7</td>
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<td>436.cactusADM</td>
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<td>740</td>
<td>16.1</td>
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<td>16.2</td>
<td>740</td>
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<td>437.leslie3d</td>
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<td>308</td>
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<td>30.5</td>
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<tr>
<td>444.namd</td>
<td>247</td>
<td>32.5</td>
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<td>32.5</td>
<td>246</td>
<td>32.5</td>
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<td>33.5</td>
<td>239</td>
<td>33.5</td>
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<td>447.dealII</td>
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<td>69.3</td>
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<td>450.soplex</td>
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<td>47.7</td>
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<td>172</td>
<td>48.6</td>
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<tr>
<td>453.povray</td>
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<td>65.0</td>
<td>82.0</td>
<td>64.8</td>
<td>82.5</td>
<td>64.5</td>
<td>73.1</td>
<td>72.8</td>
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<td>454.calculix</td>
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<td>62.2</td>
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<td>62.1</td>
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<td>62.1</td>
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<td>130</td>
<td>63.5</td>
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<tr>
<td>459.GemsFDTD</td>
<td>46.7</td>
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<td>47.4</td>
<td>224</td>
<td>48.3</td>
<td>220</td>
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<td>261</td>
<td>40.4</td>
<td>263</td>
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<tr>
<td>465.tonto</td>
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<td>52.9</td>
<td>185</td>
<td>53.0</td>
<td>185</td>
<td>53.3</td>
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<td>60.7</td>
<td>162</td>
<td>60.7</td>
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<tr>
<td>470.lbm</td>
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<td>21.2</td>
<td>648</td>
<td>20.7</td>
<td>663</td>
<td>20.8</td>
<td>662</td>
<td>21.2</td>
<td>648</td>
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<tr>
<td>481.wrf</td>
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<td>99.6</td>
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<td>99.3</td>
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<td>98.9</td>
<td>112</td>
<td>99.6</td>
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<tr>
<td>482.sphinx3</td>
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<td>92.5</td>
<td>210</td>
<td>92.8</td>
<td>211</td>
<td>92.3</td>
<td>211</td>
<td>92.5</td>
<td>210</td>
<td>92.8</td>
</tr>
</tbody>
</table>

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 C1E Support = Disabled
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on CX2550M2 Wed Jun 29 09:04:15 2016

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**SPEC CFP2006 Result**

**Fujitsu**

**PRIMERGY CX2550 M2, Intel Xeon E5-2643 v4, 3.40 GHz**

<table>
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<td>SPECfp_base2006</td>
<td>118</td>
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**CPU2006 license:** 19  
**Test sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Test date:** Jun-2016  
**Hardware Availability:** Apr-2016  
**Software Availability:** Sep-2015

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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 E5-2643 v4 @ 3.40GHz
- 2 "physical id"s (chips)
- 24 "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: 6
  - siblings: 12
  - physical 0: cores 0 1 2 3 6 7
  - physical 1: cores 0 1 2 3 6 7
- cache size: 20480 KB

From `/proc/meminfo`

- MemTotal: 264387732 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From `/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:
  
  x86_64 x86_64 x86_64 GNU/Linux

- run-level 3 Jun 29 09:00 last=5

- SPEC is set to: `/home/SPECcpu2006`

- Filesystem Type Size Used Avail Use% Mounted on
  - /dev/sda3 xfs 890G 36G 854G 5% /

Additional information from `dmidecode`:

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Fujitsu
PRIMERGY CX2550 M2, Intel Xeon E5-2643 v4, 3.40 GHz

SPECfp2006 = 122
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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 = "12"

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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Fujitsu
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SPEC CFP2006 Result

SPECfp2006 = 122
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CPU2006 license: 19
Test sponsor: Fujitsu
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Base Portability Flags (Continued)

435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64 -nofor_main
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
463.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

Fujitsu
PRIMERGY CX2550 M2, Intel Xeon E5-2643 v4, 3.40 GHz

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

SPECfp2006 = 122
SPECfp_base2006 = 118

Test date: Jun-2016
Hardware Availability: Apr-2016
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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:threadsafepass 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:threadsafepass 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:threadsafepass 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:threadsafepass 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:threadsafepass 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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**SPEC CFP2006 Result**

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| SPECfp2006 = | 122 |
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CPU2006 license: 19  
Test sponsor: Fujitsu  
Tested by: Fujitsu

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

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