# SPEC® CFP2006 Result

**Fujitsu**

PRIMERGY TX1320 M2, Intel Xeon E3-1280 v5, 3.70 GHz

| SPECfp®2006 | 99.8 |
| SPECfp_base2006 | 97.5 |

CPU2006 license: 19  
Test sponsor: Fujitsu  
Tested by: Fujitsu  
Test date: Nov-2015  
Hardware Availability: Feb-2016  
Software Availability: Sep-2015

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Score</th>
</tr>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>56.8</td>
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<tr>
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<td>129</td>
</tr>
<tr>
<td>482.sphinx3</td>
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</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon E3-1280 v5  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 4.00 GHz  
- **CPU MHz:** 3700  
- **FPU:** Integrated  
- **CPU(s) enabled:** 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
- **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

**Software**

- **Operating System:** SUSE Linux Enterprise Server 12 (x86_64)  
  Kernel 3.12.48-52.27-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:** ext4  
- **System State:** Run level 3 (multi-user)
**SPEC CFP2006 Result**

**Fujitsu**

PRIMERGY TX1320 M2, Intel Xeon E3-1280 v5, 3.70 GHz

<table>
<thead>
<tr>
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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

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

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### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>103</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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### Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

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### Platform Notes

BIOS configuration:
Sysinfo program /home/SPECcpu2006-RH72-ICC16-update/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on TX1320M2 Mon Nov 9 18:18:00 2015

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

Continued on next page
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Platform Notes (Continued)

model name : Intel(R) Xeon(R) CPU E3-1280 v5 @ 3.70GHz
  1 "physical id"s (chips)
  8 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 4
siblings : 8
physical 0: cores 0 1 2 3

cache size : 8192 KB

From /proc/meminfo
MemTotal: 65906076 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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

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

uname -a:
Linux TX1320M2 3.12.48-52.27-default #1 SMP Mon Oct 5 10:08:10 UTC 2015
(314f0e3) x86_64 x86_64 x86_64 GNU/Linux

run-level 5 Nov 9 14:09

SPEC is set to: /home/SPECcpu2006-RH72-ICC16-update
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 1.6T 21G 1.6T 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.

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Platform Notes (Continued)

BIOS FUJITSU // American Megatrends Inc. V5.0.0.11 R1.1.0 for D3373-A1x
10/30/2015
Memory:
4x SK Hynix HMA82GU7MFR8N-TF 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:
KMP_AFFINITY = "granularity=fine,compact,1,0"
OMP_NUM_THREADS = "4"

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

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**Base Portability Flags (Continued)**

- 450.soplex: \(-\text{DSPEC\_CPU\_LP64}\)
- 453.povray: \(-\text{DSPEC\_CPU\_LP64}\)
- 454.calculix: \(-\text{DSPEC\_CPU\_LP64} -\text{nofor\_main}\)
- 459.GemsFDTD: \(-\text{DSPEC\_CPU\_LP64}\)
- 465.tonto: \(-\text{DSPEC\_CPU\_LP64}\)
- 470.lbm: \(-\text{DSPEC\_CPU\_LP64}\)
- 481.wrf: \(-\text{DSPEC\_CPU\_LP64} -\text{DSPEC\_CPU\_CASE\_FLAG} -\text{DSPEC\_CPU\__LINUX}\)
- 482.sphinx3: \(-\text{DSPEC\_CPU\_LP64}\)

**Base Optimization Flags**

- **C benchmarks:**
  - \(-\text{xCORE\_AVX2} -\text{ipo} -\text{O3} -\text{no-prec-div} -\text{parallel} -\text{opt-prefetch}\)
  - \(-\text{ansi\_alias}\)

- **C++ benchmarks:**
  - \(-\text{xCORE\_AVX2} -\text{ipo} -\text{O3} -\text{no-prec-div} -\text{opt-prefetch} -\text{ansi\_alias}\)

- **Fortran benchmarks:**
  - \(-\text{xCORE\_AVX2} -\text{ipo} -\text{O3} -\text{no-prec-div} -\text{parallel} -\text{opt-prefetch}\)

- **Benchmarks using both Fortran and C:**
  - \(-\text{xCORE\_AVX2} -\text{ipo} -\text{O3} -\text{no-prec-div} -\text{parallel} -\text{opt-prefetch}\)
  - \(-\text{ansi\_alias}\)

**Peak Compiler Invocation**

- **C benchmarks:**
  - \(\text{icc} -\text{m64}\)

- **C++ benchmarks:**
  - \(\text{icpc} -\text{m64}\)

- **Fortran benchmarks:**
  - \(\text{ifort} -\text{m64}\)

- **Benchmarks using both Fortran and C:**
  - \(\text{icc} -\text{m64} \text{ ifort} -\text{m64}\)

**Peak Portability Flags**

Same as Base Portability Flags
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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) -unroll14
 -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) -unroll12
 -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) -unroll12
 -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
 -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

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

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.

Tested with SPEC CPU2006 v1.2.
Originally published on 29 December 2015.