**SPEC® CFP2006 Result**

**Fujitsu**

PRIMERGY BX2580 M2, Intel Xeon E5-2630L v4, 1.80 GHz

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<table>
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<tr>
<td>SPECfp_base2006</td>
<td>98.2</td>
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**CPU2006 license:** 19

**Test sponsor:** Fujitsu

**Test date:** Jun-2016

**Hardware Availability:** Apr-2016

**Tested by:** Fujitsu

**Software Availability:** Sep-2015

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![Diagram of SPECfp results](image)

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### Hardware

- **CPU Name:** Intel Xeon E5-2630L v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.90 GHz
- **CPU MHz:** 1800
- **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

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### 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)

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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, running at 2133 MHz)
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>
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<td>410.bwaves</td>
<td>28.2</td>
<td>482</td>
<td>29.8</td>
<td>456</td>
<td>28.3</td>
<td>480</td>
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<tr>
<td>416.gamess</td>
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<td>29.4</td>
<td>668</td>
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<td>25.6</td>
<td>314</td>
<td>25.6</td>
<td>314</td>
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<td>447.dealII</td>
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<td>459.GemsFDTD</td>
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<td>482.sphinx3</td>
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<td>58.0</td>
<td>337</td>
<td>57.8</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 CIE Support = Disabled
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-rzz5 Mon Jun 20 17:21:11 2016

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SPECfp2006 = 105
SPECfp_base2006 = 98.2

CPU2006 license: 19
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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 E5-2630L v4 @ 1.80GHz
  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: 264516260 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 Jun 20 17:20 last=5

SPEC is set to: /home/SPECcpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 331G 76G 255G 23% /home

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Platform Notes (Continued)

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 R1.4.0 for D3321-B1x
03/17/2016
Memory:
16x Samsung M393A2G40EB1-CRC 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"
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

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## SPEC CFP2006 Result

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### Base Portability Flags (Continued)

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<td>-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>482.sphinx3</td>
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### 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
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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) -03(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) -03(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) -03(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) -03(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) -03(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

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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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Tested with SPEC CPU2006 v1.2.
Originally published on 23 August 2016.