**Fujitsu**

**PRIMERGY BX2580 M2, Intel Xeon E5-2695 v4, 2.10 GHz**

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>117</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>111</td>
</tr>
</tbody>
</table>

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

**Hardware**

<table>
<thead>
<tr>
<th>CPU Name</th>
<th>Intel Xeon E5-2695 v4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.30 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2100</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>36 cores, 2 chips, 18 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**

| Operating System | SUSE Linux Enterprise Server 12 SP1 (x86_64)  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kernel 3.12.49-11-default</td>
</tr>
</tbody>
</table>
| 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) |

**Test date:** Jun-2016  
**Hardware Availability:** Apr-2016  
**Software Availability:** Sep-2015
## SPEC CFP2006 Result

Fujitsu

PRIMERGY BX2580 M2, Intel Xeon E5-2695 v4, 2.10 GHz

### SPECfp2006 = 117

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base Pointers: 64-bit</th>
<th>Peak Pointers: 32/64-bit</th>
<th>Other Software: None</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>21.3</td>
<td>639</td>
<td>20.8</td>
<td>652</td>
<td></td>
</tr>
<tr>
<td>416.gamess</td>
<td>614</td>
<td>31.9</td>
<td>615</td>
<td>31.8</td>
<td></td>
</tr>
<tr>
<td>433.milec</td>
<td>131</td>
<td>69.8</td>
<td>134</td>
<td>68.7</td>
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</tr>
<tr>
<td>434.zeusmp</td>
<td>44.6</td>
<td>204</td>
<td>44.5</td>
<td>205</td>
<td></td>
</tr>
<tr>
<td>435.gromacs</td>
<td>170</td>
<td>42.1</td>
<td>170</td>
<td>42.1</td>
<td></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>12.4</td>
<td>966</td>
<td>12.4</td>
<td>966</td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>25.8</td>
<td>364</td>
<td>25.6</td>
<td>367</td>
<td></td>
</tr>
<tr>
<td>444.namd</td>
<td>276</td>
<td>29.1</td>
<td>276</td>
<td>29.1</td>
<td></td>
</tr>
<tr>
<td>447.dealII</td>
<td>188</td>
<td>60.9</td>
<td>187</td>
<td>61.1</td>
<td></td>
</tr>
<tr>
<td>450.soplex</td>
<td>180</td>
<td>46.3</td>
<td>181</td>
<td>46.0</td>
<td></td>
</tr>
<tr>
<td>453.povray</td>
<td>94.5</td>
<td>56.3</td>
<td>94.7</td>
<td>56.2</td>
<td></td>
</tr>
<tr>
<td>454.calculix</td>
<td>166</td>
<td>49.6</td>
<td>167</td>
<td>49.5</td>
<td></td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>45.6</td>
<td>233</td>
<td>45.2</td>
<td>235</td>
<td></td>
</tr>
<tr>
<td>465.tonto</td>
<td>263</td>
<td>37.3</td>
<td>261</td>
<td>37.7</td>
<td></td>
</tr>
<tr>
<td>470.lbm</td>
<td>14.9</td>
<td>922</td>
<td>14.9</td>
<td>924</td>
<td></td>
</tr>
<tr>
<td>481.wrf</td>
<td>105</td>
<td>106</td>
<td>105</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>304</td>
<td>64.1</td>
<td>304</td>
<td>64.1</td>
<td></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 linux-rzz5 Mon Jun 27 16:12:00 2016

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SPEC CFP2006 Result

Fujitsu
PRIMERGY BX2580 M2, Intel Xeon E5-2695 v4, 2.10 GHz

SPECfp2006 = 117
SPECfp_base2006 = 111

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu
Test date: Jun-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 E5-2695 v4 @ 2.10GHz
2 "physical id"s (chips)
72 "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 : 18
siblings : 36
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 46080 KB

From /proc/meminfo
MemTotal: 264512420 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 27 16:11 last=5

SPEC is set to: /home/SPECcpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 331G 131G 200G 40% /home
Additional information from dmidecode:
Continued on next page
SPECFP2006 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 D3321-B1x
03/17/2016
Memory:
16x Samsung M393A2G40EB1-CRC 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 = "36"

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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**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
- 454. calculix: -DSPEC_CPU_LP64 -nofor_main
- 459. GemsFDTD: -DSPEC_CPU_LP64
- 463. tonto: -DSPEC_CPU_LP64
- 470. lbm: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
- 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**

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<td></td>
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<td>Hardware Availability: Apr-2016</td>
<td></td>
</tr>
<tr>
<td>Software Availability: Sep-2015</td>
<td></td>
</tr>
</tbody>
</table>

**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

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Fujitsu
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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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