**Fujitsu**

PRIMERGY BX2560 M2, Intel Xeon E5-2680 v4, 2.40 GHz

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

---

### SPECfp2006 = 123

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<th>Test</th>
<th>SPECfp_base2006 = 117</th>
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<tr>
<td>410.bwaves</td>
<td>620</td>
</tr>
<tr>
<td>416.gamess</td>
<td>36.4</td>
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<tr>
<td>433.milc</td>
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<tr>
<td>434.zeusmp</td>
<td>218</td>
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<tr>
<td>435.gromacs</td>
<td>50.6</td>
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<tr>
<td>436.cactusADM</td>
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<tr>
<td>437.leslie3d</td>
<td>371</td>
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<tr>
<td>444.namd</td>
<td>30.0</td>
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<tr>
<td>447.dealII</td>
<td>29.1</td>
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<td>450.soplex</td>
<td>46.6</td>
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<tr>
<td>453.povray</td>
<td>66.3</td>
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<tr>
<td>454.calculix</td>
<td>59.2</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>53.7</td>
</tr>
<tr>
<td>465.tonto</td>
<td>55.3</td>
</tr>
<tr>
<td>470.lbm</td>
<td>42.9</td>
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<tr>
<td>481.wrf</td>
<td>114</td>
</tr>
<tr>
<td>482.sphinx3</td>
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### Hardware

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<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2680 v4</td>
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<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.30 GHz</td>
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<tr>
<td>CPU MHz:</td>
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<tr>
<td>FPU:</td>
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<tr>
<td>CPU(s) enabled:</td>
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<tr>
<td>CPU(s) orderable:</td>
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<tr>
<td>Primary Cache:</td>
<td>32 KB L1 + 32 KB D on chip per core</td>
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<tr>
<td>Secondary Cache:</td>
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### Software

<table>
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<th>Parameter</th>
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<tbody>
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<td>Operating System:</td>
<td>SUSE Linux Enterprise Server 12 SP1 (x86_64)</td>
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<td></td>
<td>Kernel 3.12.49-11-default</td>
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<td>Compiler:</td>
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<tr>
<td>Auto Parallel:</td>
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<td>File System:</td>
<td>xfs</td>
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<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
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</tbody>
</table>
SPEC CFP2006 Result

Fujitsu
PRIMERGY BX2560 M2, Intel Xeon E5-2680 v4, 2.40 GHz

SPECfp2006 = 123
SPECfp_base2006 = 117

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

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

L3 Cache: 35 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, 500 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>
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<td>75.2</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 BX2560M2-T-313 Tue Jun 21 10:27:19 2016

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Fujitsu
PRIMERGY BX2560 M2, Intel Xeon E5-2680 v4, 2.40 GHz

SPECfp2006 = 123
SPECfp_base2006 = 117

CPU2006 license: 19
Test sponsor: Fujitsu
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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 E5-2680 v4@ 2.40GHz
2 "physical id"s (chips)
56 "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 : 14
siblings : 28
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
cache size : 35840 KB
```

From /proc/meminfo

```
MemTotal:       264514752 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

```
lsb_release -d
SUSE Linux Enterprise Server 12 SP1
```

```
lsb_release -d
SUSE Linux Enterprise Server 12 SP1
```

```
uname -a:
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jun 21 10:26 last=5
```

SPEC is set to: /home/SPECcpu2006

Additional information from dmidecode:

Continued on next page
SPEC CFP2006 Result

Fujitsu
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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 D3320-B1x
03/17/2016
Memory:
  8x Hyundai Electronics (Hynix) HMA42GR7AFR4N-UH 16 GB 2 rank 2400 MHz
  8x Micron Technology 36ASF2G72PZ-2G3A3 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 = "28"

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

**Fujitsu**

PRIMERGY BX2560 M2, Intel Xeon E5-2680 v4, 2.40 GHz

| SPECfp2006 = | 123 |
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| Tested by:     | Fujitsu |

| Test date:     | Jun-2016 |
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| Software Availability: | Sep-2015 |

### Base Portability Flags (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
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<tr>
<td>434.zeusmp</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>-DSPEC_CPU_LP64 -nofor_main</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>-DSPEC_CPU_LP64 -nofor_main</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>444.namd</td>
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<td>-DSPEC_CPU_LP64</td>
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<td>450.soplex</td>
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<td>453.povray</td>
<td>-DSPEC_CPU_LP64 -nofor_main</td>
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<td>454.calculix</td>
<td>-DSPEC_CPU_LP64 -nofor_main</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>465.tonto</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>481.wrf</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
</tbody>
</table>

### 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: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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SPEC CFP2006 Result

Fujitsu

PRIMERGY BX2560 M2, Intel Xeon E5-2680 v4, 2.40 GHz

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

Tested with SPEC CPU2006 v1.2.
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