**Fujitsu**

PRIMERGY BX2580 M2, Intel Xeon E5-2623 v4, 2.60 GHz

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| SPECfp<sup>®</sup>_rate<sub>2006</sub> = 367 |
| SPECfp_rate_base2006 = 360 |

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

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong></td>
<td>Operating System: SUSE Linux Enterprise Server 12 SP1 (x86_64)</td>
</tr>
<tr>
<td>Intel Xeon E5-2623 v4</td>
<td>Kernel 3.12.49-11-default</td>
</tr>
<tr>
<td><strong>CPU Characteristics:</strong></td>
<td>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</td>
</tr>
<tr>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td><strong>CPU MHz:</strong></td>
<td>File System: xfs</td>
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<tr>
<td>2600</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td><strong>FPU:</strong></td>
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<tr>
<td>Integrated</td>
<td></td>
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<tr>
<td><strong>CPU(s) enabled:</strong></td>
<td></td>
</tr>
<tr>
<td>8 cores, 2 chips, 4 cores/chip, 2 threads/core</td>
<td></td>
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<tr>
<td><strong>CPU(s) orderable:</strong></td>
<td></td>
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<tr>
<td>1,2 chip</td>
<td></td>
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<tr>
<td><strong>Primary Cache:</strong></td>
<td></td>
</tr>
<tr>
<td>32 KB I + 32 KB D on chip per core</td>
<td></td>
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<tr>
<td><strong>Secondary Cache:</strong></td>
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<tr>
<td>256 KB I+D on chip per core</td>
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</tbody>
</table>

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

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Tested by: Fujitsu

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Hardware Availability:

- **CPU(s) orderable**: 1, 2 chip
  - 16 copies
- **Primary Cache**: 32 KB I + 32 KB D on chip per core
  - 16 copies
- **Secondary Cache**: 256 KB I+D on chip per core
  - 16 copies

---

Software Availability:

- **Operating System**: SUSE Linux Enterprise Server 12 SP1 (x86_64)
- **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**: No
- **File System**: xfs
- **System State**: Run level 3 (multi-user)
## SPEC CFP2006 Result

### Fujitsu
PRIMERGY BX2580 M2, Intel Xeon E5-2623 v4, 2.60 GHz

<table>
<thead>
<tr>
<th>SPECfp_rate2006</th>
<th>SPECfp_rate_base2006</th>
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</thead>
<tbody>
<tr>
<td>367</td>
<td>360</td>
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</table>

**CPU2006 license:** 19  
**Test sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Test date:** Jul-2016  
**Hardware Availability:** Apr-2016  
**Software Availability:** Sep-2015

- **L3 Cache:** 10 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:** 32/64-bit  
- **Peak Pointers:** 32/64-bit  
- **Other Software:** None

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
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</tbody>
</table>

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

### Submit Notes

The `numactl` mechanism was used to bind copies to processors. The `submit` config file option was used to generate `numactl` commands to bind each copy to a specific processor. For details, please see the config file.

### Operating System Notes

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

### Platform Notes

- BIOS configuration:  
  - Energy Performance = Performance  
  - Utilization Profile = Unbalanced  

Continued on next page
Fujitsu

PRIMERGY BX2580 M2, Intel Xeon E5-2623 v4, 2.60 GHz

SPECfp_rate2006 = 367
SPECfp_rate_base2006 = 360

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

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

Platform Notes (Continued)

QPI snoop mode: Early Snoop
COD Enable = Disabled, Early Snoop = Enabled, Home Snoop Dir OSB = Disabled
CPU C1E Support = Disabled
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1

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 E5-2623 v4 @ 2.60GHz
2 "physical id"s (chips)
16 "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 : 4
siblings : 8
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB

From /proc/meminfo
MemTotal: 264519268 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

Continued on next page
SPEC CFP2006 Result

Fujitsu
PRIMERGY BX2580 M2, Intel Xeon E5-2623 v4, 2.60 GHz

SPECfp_rate2006 = 367
SPECfp_rate_base2006 = 360

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

Platform Notes (Continued)

run-level 3 Jul 13 12:02 last=5

SPEC is set to: /home/SPECcpu2006
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda3      xfs   331G   19G  312G   6% /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.

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:
LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"

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
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
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.games: -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
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.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 -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64
Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

```bash
icc -m64 ifort -m64
```

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) -opt-mem-layout-trans=3(pass 2)
  -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) -opt-mem-layout-trans=3(pass 2)
  -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

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Fujitsu
PRIMERGY BX2580 M2, Intel Xeon E5-2623 v4, 2.60 GHz

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

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SPECfp_rate_base2006 = 360

Test date: Jul-2016
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Software Availability: Sep-2015

Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto:  -xCORE-AVX2(pas 2)  -prof-gen:threadsafe(pas 1)
-ipo(pas 2)  -O3(pas 2)  -no-prec-div(pas 2)
-par-num-threads=1(pas 1)  -prof-use(pas 2)  -unroll4  -auto
-inline-calloc  -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs:  -xCORE-AVX2(pas 2)  -prof-gen:threadsafe(pas 1)
-ipo(pas 2)  -O3(pas 2)  -no-prec-div(pas 2)
-par-num-threads=1(pas 1)  -opt-mem-layout-trans=3(pas 2)
-prof-use(pas 2)  -opt-prefetch  -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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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