## SPEC® CFP2006 Result

### Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2667 v4, 3.20 GHz

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

#### SPECfp®2006 = 128

| SPECfp_base2006 = 124 |

### Hardware

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2667 v4</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.60 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>3200</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>16 cores, 2 chips, 8 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

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>SUSE Linux Enterprise Server 12 SP1 (x86_64)</td>
</tr>
<tr>
<td></td>
<td>Kernel 3.12.49-11-default</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;</td>
</tr>
<tr>
<td></td>
<td>Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>ext4</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
</tbody>
</table>

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### Benchmarks

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>46.7</td>
</tr>
<tr>
<td>416.game</td>
<td>44.1</td>
</tr>
<tr>
<td>433.milc</td>
<td>73.9</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>225</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>63.4</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>59.8</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>240</td>
</tr>
<tr>
<td>444.namd</td>
<td>31.7</td>
</tr>
<tr>
<td>447.dealII</td>
<td>67.9</td>
</tr>
<tr>
<td>450.soplex</td>
<td>48.8</td>
</tr>
<tr>
<td>453.povray</td>
<td>288</td>
</tr>
<tr>
<td>454.calculix</td>
<td>59.1</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>52.0</td>
</tr>
<tr>
<td>465.tonto</td>
<td>120</td>
</tr>
<tr>
<td>470.lbm</td>
<td>48.8</td>
</tr>
<tr>
<td>481.wrf</td>
<td>62.5</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>70.0</td>
</tr>
</tbody>
</table>

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**SPECFp2006 = 128**
### SPEC CFP2006 Result

**Fujitsu**

PRIMERGY RX2540 M2, Intel Xeon E5-2667 v4, 3.20 GHz

| SPECfp2006 | 128 |
| SPECfp_base2006 | 124 |

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

- **L3 Cache:** 25 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 |

**Test date:** Feb-2016  
**Hardware Availability:** Apr-2016  
**Software Availability:** Sep-2015

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>23.8</td>
<td>23.8</td>
</tr>
<tr>
<td>416.gamess</td>
<td>444</td>
<td>419</td>
</tr>
<tr>
<td>433.milc</td>
<td>124</td>
<td>124</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>40.9</td>
<td>40.9</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>112</td>
<td>112</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>14.3</td>
<td>14.3</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>23.4</td>
<td>23.4</td>
</tr>
<tr>
<td>444.namd</td>
<td>253</td>
<td>246</td>
</tr>
<tr>
<td>447.dealII</td>
<td>168</td>
<td>168</td>
</tr>
<tr>
<td>450.soplex</td>
<td>172</td>
<td>172</td>
</tr>
<tr>
<td>453.povray</td>
<td>83.6</td>
<td>75.6</td>
</tr>
<tr>
<td>454.calculix</td>
<td>138</td>
<td>132</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>44.6</td>
<td>37.2</td>
</tr>
<tr>
<td>465.tonto</td>
<td>193</td>
<td>166</td>
</tr>
<tr>
<td>470.lbm</td>
<td>18.9</td>
<td>18.9</td>
</tr>
<tr>
<td>481.wrf</td>
<td>92.9</td>
<td>92.9</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>211</td>
<td>211</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  
- CPU C1E Support = Disabled  
- Sysinfo program /home/BUNDLE/config/sysinfo.rev6914  

$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1  
running on RX2540M2 Mon Feb 15 15:59:24 2016
### 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](http://www.spec.org/cpu2006/Docs/config.html#sysinfo)

From `/proc/cpuinfo`
- `model name`: Intel(R) Xeon(R) CPU E5-2667 v4 @ 3.20GHz
- `2 "physical id"s (chips)`
- `32 "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`: 8
  - `siblings`: 16
  - `physical 0: cores 0 2 3 4 8 10 11 12`
  - `physical 1: cores 0 2 3 4 8 10 11 12`
- `cache size`: 25600 KB

From `/proc/meminfo`
- `MemTotal`: 264400668 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 Feb 15 15:57 last=5
SPEC is set to: /home/BUNDLE
```

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda4</td>
<td>xfs</td>
<td>424G</td>
<td>220G</td>
<td>204G</td>
<td>52%</td>
<td>/home</td>
</tr>
</tbody>
</table>

Additional information from `dmidecode`:

Continued on next page
### SPEC CFP2006 Result

**Fujitsu**

PRIMERGY RX2540 M2, Intel Xeon E5-2667 v4, 3.20 GHz

SPECfp2006 = 128  
SPECfp_base2006 = 124

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<td>Fujitsu</td>
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</table>

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

#### 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 R1.1.0 for D3289-B1x  
01/14/2016  
Memory:  
16x Micron 36ASF2G72PZ-2G3A3 16 GB 2 rank 2400 MHz  
8x NO DIMM NO DIMM

(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/BUNDLE/libs/32:/home/BUNDLE/libs/64:/home/BUNDLE/sh"  
OMP_NUM_THREADS = "16"

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

#### 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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CPU2006 license: 19
Test sponsor: Fujitsu
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SPECfp2006 = 128
SPECfp_base2006 = 124

Test date: Feb-2016
Hardware Availability: Apr-2016
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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
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
Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2667 v4, 3.20 GHz

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

SPECfp2006 = 128
SPECfp_base2006 = 124

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) -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

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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

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.