### Fujitsu

**PRIMERGY CX2550 M1, Intel Xeon E5-2699 v3, 2.3 GHz**

**SPECfp®2006 =** 116  
**SPECfp_base2006 =** 109

<table>
<thead>
<tr>
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<th>Fujitsu</th>
<th>Test date:</th>
<th>Nov-2014</th>
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<tr>
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<td>Fujitsu</td>
<td>Hardware Availability:</td>
<td>Sep-2014</td>
</tr>
<tr>
<td>CPU2006 license:</td>
<td>19</td>
<td>Software Availability:</td>
<td>Sep-2014</td>
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</tbody>
</table>

#### Hardware
- **CPU Name:** Intel Xeon E5-2699 v3  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.60 GHz  
- **CPU MHz:** 2300  
- **FPU:** Integrated  
- **CPU(s) enabled:** 36 cores, 2 chips, 18 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

#### Software
- **Operating System:** Red Hat Enterprise Linux Server release 7.0 (Maipo)  
- **Compiler:** C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux; Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux  
- **Auto Parallel:** Yes  
- **File System:** xfs

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**SPECfp2006 = 116**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>42.7</td>
</tr>
<tr>
<td>416.gamess</td>
<td>34.0</td>
</tr>
<tr>
<td>433.milc</td>
<td>72.4</td>
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<tr>
<td>434.zeusmp</td>
<td>208</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>38.5</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>363</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>31.2</td>
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<tr>
<td>444.namd</td>
<td>56.9</td>
</tr>
<tr>
<td>447.dealII</td>
<td>46.0</td>
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<tr>
<td>450.soplex</td>
<td>62.2</td>
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<tr>
<td>453.povray</td>
<td>55.8</td>
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<td>454.calculix</td>
<td>56.8</td>
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<tr>
<td>459.GemsFDTD</td>
<td>50.5</td>
</tr>
<tr>
<td>465.tonto</td>
<td>266</td>
</tr>
<tr>
<td>470.lbm</td>
<td>35.9</td>
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<tr>
<td>481.wrf</td>
<td>112</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>65.8</td>
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**SPECfp_base2006 = 109**

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## SPEC CFP2006 Result

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| L3 Cache: | 45 MB I+D on chip per chip  
| Other Cache: | None  
| Memory: | 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
| Disk Subsystem: | 1 x SATA, 500 GB, 7200 RPM  
| Other Hardware: | None  

| System State: | Run level 3 (multi-user)  
| Base Pointers: | 64-bit  
| Peak Pointers: | 32/64-bit  
| Other Software: | None

### Results Table

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<tr>
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<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>23.5</td>
<td>22.8</td>
</tr>
<tr>
<td>416.gamess</td>
<td>576</td>
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<tr>
<td>433.milc</td>
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<td>434.zeusmp</td>
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<td>185</td>
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<td>436.cactusADM</td>
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<td>12.8</td>
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<td>437.leslie3d</td>
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<td>444.namd</td>
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<td>450.soplex</td>
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<td>453.povray</td>
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<td>454.calculix</td>
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<tr>
<td>459.GemsFDTD</td>
<td>46.0</td>
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<tr>
<td>465.tonto</td>
<td>274</td>
<td>274</td>
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<td>470.lbm</td>
<td>16.7</td>
<td>16.6</td>
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<tr>
<td>481.wrf</td>
<td>104</td>
<td>99.6</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>300</td>
<td>296</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

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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 Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

This result was measured on the PRIMERGY CX2550 M1. The PRIMERGY CX2550 M1 and the PRIMERGY CX2570 M1 are electronically equivalent.
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
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
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
Fujitsu

PRIMERGY CX2550 M1, Intel Xeon E5-2699 v3, 2.3 GHz

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**Software Availability:** Sep-2014

### 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`

### Peak Portability Flags

Same as Base Portability Flags

### Peak Optimization Flags

**C benchmarks:**
- `433.milc`: `-xCORE-AVX2(pass 2)`  
- `-prof-gen(pass 1)`  
- `-ipo(pass 2)`  
- `-O3(pass 2)`  
- `-no-prec-div(pass 2)`  
- `-prof-use(pass 2)`  
- `-auto-ilp32`  
- `-ansi-alias`

- `470.lbm`: `basepeak = yes`

- `482.sphinx3`: `basepeak = yes`

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PEC SPEC2006 Result

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(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(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -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(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-inline-calloc -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 -03 -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-ic15.0-official-linux64.html
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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.xml

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Tested with SPEC CPU2006 v1.2.