Fujitsu
PRIMERGY TX200 S6, Intel Xeon L5640, 2.26 GHz

<table>
<thead>
<tr>
<th>SPECfp\textsuperscript{\textregistered}_rate\textsubscript{2006}</th>
<th>108</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp\textsubscript{rate}\textsubscript{base2006} = 105</td>
<td></td>
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</tbody>
</table>

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

<table>
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<tr>
<th>Test date:</th>
<th>Aug-2010</th>
</tr>
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<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Jul-2010</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Jan-2010</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon L5640
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.8 GHz
- **CPU MHz:** 2267
- **FPU:** Integrated
- **CPU(s) enabled:** 6 cores, 1 chip, 6 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1,2 chips
- **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:** SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
- **Compiler:** Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
- **Auto Parallel:** No
- **File System:** ext3
- **System State:** Multi-User Run Level 3

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)
Disk Subsystem: 1 x SATA, 160 GB, 5.4 krpm
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>Peak</td>
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</table>

Submit Notes

The config file option 'submit' was used.
numactl was used to bind copies to the cores.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.

Platform Notes

BIOS configuration:
Data Reuse Optimization = Disable
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| SPECfp_rate_base2006 = | 105 |

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General Notes
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
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:
- xsse4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:
- xsse4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:
- xsse4.2 -ipo -O3 -no-prec-div -static

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### Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
- `-xSSE4.2 -ipo -O3 -no-prec-div -static`

### Peak Compiler Invocation

C benchmarks (except as noted below):
- `icc -m64`
- `icc -m32`

C++ benchmarks (except as noted below):
- `icpc -m64`
- `icpc -m32`

Fortran benchmarks:
- `ifort -m64`

Benchmarks using both Fortran and C:
- `icc -m64 ifort -m64`

### Peak 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`
- `447.dealII: -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`

### Peak Optimization Flags

C benchmarks:

Continued on next page
Peak Optimization Flags (Continued)

433.milc: -xsse4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
    -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
    -fno-alias -opt-prefetch

470.lbm: -xsse4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
    -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
    -opt-malloc-options=3 -ansi-alias -auto-ilp32

482.sphinx3: -xsse4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -xsse4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
    -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
    -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xsse4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
    -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
    -opt-malloc-options=3

453.povray: -xsse4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
    -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
    -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xsse4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: basepeak = yes

434.zesmp: basepeak = yes

437.leslie3d: -xsse4.2 -ipo -O3 -no-prec-div -static

459.GemsFDTD: -xsse4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
    -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
    -unroll12 -Ob0

465.tonto: -xsse4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
    -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
    -unroll4 -auto -inline-calloc -opt-malloc-options=3

Benmarks using both Fortran and C:

435.gromacs: -xsse4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
    -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
    -opt-prefetch -auto-ilp32

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes
454.calculix: basepeak = yes
481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

You can also download the XML flags source by saving the following link:

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