Fujitsu

PRIMERGY TX1320 M2, Intel Pentium G4400, 3.30 GHz

SPECfp®2006 = 71.1
SPECfp_base2006 = 70.4

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

Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Pentium G4400</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td></td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>3300</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>2 cores, 1 chip, 2 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1 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

| Operating System:    | SUSE Linux Enterprise Server 12 (x86_64) Kernel 3.12.48-52.27-default |
| 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:       | Yes                     |
| File System:         | ext4                    |
| System State:        | Run level 3 (multi-user) |
***** Spec CFP2006 Result *****

**Fujitsu**

PRIMERGY TX1320 M2, Intel Pentium G4400, 3.30 GHz

| SPECfp2006 = | 71.1 |
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**CPU2006 license:** 19  
**Test date:** Jan-2016  
**Test sponsor:** Fujitsu  
**Hardware Availability:** Feb-2016  
**Tested by:** Fujitsu  
**Software Availability:** Sep-2015

| L3 Cache: | 3 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 64 GB (4 x 16 GB 2Rx8 PC4-2133P-E) |
| 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>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>134</td>
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<tr>
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<td>73.3</td>
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<td>316</td>
<td>61.6</td>
<td>317</td>
<td>61.4</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:
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914  
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1  
running on TX1320M2 Wed Jan 6 13:07:34 2016

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

Continued on next page
SPEC CFP2006 Result

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

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

Platform Notes (Continued)

model name : Intel(R) Pentium(R) CPU G4400 @ 3.30GHz
  1 "physical id"s (chips)
  2 "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 : 2
siblings : 2
  physical 0: cores 0 1
  cache size : 3072 KB

From /proc/meminfo
MemTotal: 65906892 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 0
  # 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"
  VERSION_ID="12"
  PRETTY_NAME="SUSE Linux Enterprise Server 12"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12"

uname -a:
  Linux TX1320M2 3.12.48-52.27-default #1 SMP Mon Oct 5 10:08:10 UTC 2015
  (314f0e3) x86_64 x86_64 x86_64 GNU/Linux

run-level 5 Jan 6 12:56

SPEC is set to: /home/SPECcpu2006

Filesystem     Type Size  Used Avail Use% Mounted on
/dev/sda3      xfs  1.6T  26G  1.6T  2% /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.

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Fujitsu
PRIMERGY TX1320 M2, Intel Pentium G4400, 3.30 GHz

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Test date: Jan-2016  
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Platform Notes (Continued)
BIOS FUJITSU // American Megatrends Inc. V5.0.0.11 R1.1.0 for D3373-A1x  
10/30/2015  
Memory:  
4x SK Hynix HMA82GU7MFR8N-TF 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:
KMP_AFFINITY = "granularity=fine,compact,1,0"  
LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"  
OMP_NUM_THREADS = "2"  

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  
- 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  

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### Fujitsu

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<td>Hardware Availability</td>
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<tr>
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</table>

### Base Portability Flags (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>450.soplex</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>453.povray</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<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>470.lbm</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>
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</tbody>
</table>

### Base Optimization Flags

- **C benchmarks**
  - `-xSSE4.2` `-ipo` `-O3` `-no-prec-div` `-parallel` `-opt-prefetch` `-ansi-alias`
- **C++ benchmarks**
  - `-xSSE4.2` `-ipo` `-O3` `-no-prec-div` `-opt-prefetch` `-ansi-alias`
- **Fortran benchmarks**
  - `-xSSE4.2` `-ipo` `-O3` `-no-prec-div` `-parallel` `-opt-prefetch`
- **Benchmarks using both Fortran and C**
  - `-xSSE4.2` `-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
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Software Availability: Sep-2015

Peak Optimization Flags

C benchmarks:
433.milc: basepeak = yes
470.lbm: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: basepeak = yes
465.tonto: -xSSE4.2(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-call -opt-malloc-options=3
-auto -unroll4

Benchmarks using both Fortran and C:
435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
454.calculix: basepeak = yes
Fujitsu

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Peak Optimization Flags (Continued)

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.

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