# SPEC® CFP2006 Result

## Lenovo Group Limited

### Lenovo ThinkServer TS150

(2.90 GHz, Intel Xeon E3-1260L v5)

<table>
<thead>
<tr>
<th>Specf2006</th>
<th>98.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECf2006 =</td>
<td>96.4</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 9017

**Test sponsor:** Lenovo Group Limited

**Tested by:** Lenovo Group Limited

---

**CPU Characteristics:**

- Intel Xeon E3-1260L v5
- Intel Turbo Boost Technology up to 3.90 GHz
- 2900
- Integrated
- 1 chip
- 2 cores, 1 chip, 4 cores/chip

**Primary Cache:**

- 32 KB I + 32 KB D on chip per core
- 256 KB I+D on chip per core

**Secondary Cache:**

- 0

---

**Operating System:**

- SUSE Linux Enterprise Server 12 (x86_64)
- Kernel 3.12.28-4-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:**

- xfs

**System State:**

- Run level 3 (multi-user)
Lenovo Group Limited

Lenovo ThinkServer TS150
(2.90 GHz, Intel Xeon E3-1260L v5)

SPECfp2006 = 98.7
SPECfp_base2006 = 96.4

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited
L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (4 x 8 GB 2Rx8 PC4-2133P-U)
Disk Subsystem: 1 x 800 GB SATA SSD
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>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>97.0</td>
<td>140</td>
<td>96.6</td>
<td>141</td>
<td>96.5</td>
<td>141</td>
<td>97.0</td>
<td>140</td>
<td>96.6</td>
<td>141</td>
<td>96.5</td>
<td>141</td>
</tr>
<tr>
<td>416.gamess</td>
<td>398</td>
<td>49.2</td>
<td>397</td>
<td>49.3</td>
<td>398</td>
<td>49.2</td>
<td>353</td>
<td>55.5</td>
<td>353</td>
<td>55.5</td>
<td>353</td>
<td>55.5</td>
</tr>
<tr>
<td>433.milc</td>
<td>81.4</td>
<td>113</td>
<td>81.2</td>
<td>113</td>
<td>81.3</td>
<td>113</td>
<td>81.4</td>
<td>113</td>
<td>81.2</td>
<td>113</td>
<td>81.3</td>
<td>113</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>44.1</td>
<td>206</td>
<td>44.1</td>
<td>207</td>
<td>44.0</td>
<td>207</td>
<td>44.1</td>
<td>206</td>
<td>44.1</td>
<td>207</td>
<td>44.0</td>
<td>207</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>107</td>
<td>66.8</td>
<td>107</td>
<td>66.8</td>
<td>107</td>
<td>66.7</td>
<td>107</td>
<td>66.8</td>
<td>107</td>
<td>66.8</td>
<td>107</td>
<td>66.7</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>33.4</td>
<td>357</td>
<td>33.8</td>
<td>354</td>
<td>34.0</td>
<td>351</td>
<td>33.4</td>
<td>357</td>
<td>33.8</td>
<td>354</td>
<td>34.0</td>
<td>351</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>87.5</td>
<td>107</td>
<td>87.2</td>
<td>108</td>
<td>87.4</td>
<td>108</td>
<td>87.5</td>
<td>107</td>
<td>87.2</td>
<td>108</td>
<td>87.4</td>
<td>108</td>
</tr>
<tr>
<td>444.namd</td>
<td>215</td>
<td>37.3</td>
<td>214</td>
<td>37.5</td>
<td>214</td>
<td>37.5</td>
<td>210</td>
<td>38.2</td>
<td>210</td>
<td>38.2</td>
<td>210</td>
<td>38.2</td>
</tr>
<tr>
<td>447.dealII</td>
<td>140</td>
<td>81.9</td>
<td>140</td>
<td>82.0</td>
<td>140</td>
<td>82.0</td>
<td>140</td>
<td>81.9</td>
<td>140</td>
<td>82.0</td>
<td>140</td>
<td>82.0</td>
</tr>
<tr>
<td>450.soplex</td>
<td>146</td>
<td>57.1</td>
<td>145</td>
<td>57.6</td>
<td>146</td>
<td>57.1</td>
<td>146</td>
<td>57.1</td>
<td>145</td>
<td>57.6</td>
<td>146</td>
<td>57.1</td>
</tr>
<tr>
<td>453.povray</td>
<td>72.5</td>
<td>73.4</td>
<td>73.2</td>
<td>72.6</td>
<td>73.8</td>
<td>72.1</td>
<td>64.4</td>
<td>82.7</td>
<td>63.5</td>
<td>83.8</td>
<td>64.5</td>
<td>82.4</td>
</tr>
<tr>
<td>454.calculix</td>
<td>106</td>
<td>77.7</td>
<td>106</td>
<td>77.8</td>
<td>106</td>
<td>77.7</td>
<td>104</td>
<td>79.3</td>
<td>104</td>
<td>79.3</td>
<td>104</td>
<td>79.3</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>128</td>
<td>82.6</td>
<td>128</td>
<td>82.7</td>
<td>128</td>
<td>82.6</td>
<td>128</td>
<td>82.9</td>
<td>128</td>
<td>82.9</td>
<td>128</td>
<td>82.9</td>
</tr>
<tr>
<td>465.tonto</td>
<td>150</td>
<td>65.6</td>
<td>150</td>
<td>65.6</td>
<td>150</td>
<td>65.7</td>
<td>133</td>
<td>73.9</td>
<td>133</td>
<td>73.9</td>
<td>134</td>
<td>73.7</td>
</tr>
<tr>
<td>470.lbm</td>
<td>73.7</td>
<td>186</td>
<td>73.6</td>
<td>187</td>
<td>73.5</td>
<td>187</td>
<td>73.7</td>
<td>186</td>
<td>73.6</td>
<td>187</td>
<td>73.5</td>
<td>187</td>
</tr>
<tr>
<td>481.wrf</td>
<td>87.4</td>
<td>128</td>
<td>87.6</td>
<td>128</td>
<td>87.6</td>
<td>127</td>
<td>87.4</td>
<td>128</td>
<td>87.6</td>
<td>128</td>
<td>87.6</td>
<td>127</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>192</td>
<td>101</td>
<td>192</td>
<td>101</td>
<td>192</td>
<td>102</td>
<td>192</td>
<td>101</td>
<td>192</td>
<td>101</td>
<td>192</td>
<td>102</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:
EIST Support set to Enabled
Intel (R) Hyper-Threading set to Disabled
C1E Support set to Enabled
C State Support set to Enabled
Turbo Mode set to Enable
Sysinfo program /home/cpu2006-1.2-ic16.0/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on TS150 Mon Jan 18 12:12:07 2016

Continued on next page

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Lenovo Group Limited

Lenovo ThinkServer TS150
(2.90 GHz, Intel Xeon E3-1260L v5)

SPECfp2006 = 98.7
SPECfp_base2006 = 96.4

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: Jan-2016
Hardware Availability: Oct-2015
Software Availability: Aug-2015

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

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E3-1260L v5 @ 2.90GHz
1 "physical id"s (chips)
4 "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 : 4
physical 0: cores 0 1 2 3
cache size : 8192 KB

From /proc/meminfo
MemTotal: 32933324 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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 TS150 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014 (9879bd4)
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 18 08:01

SPEC is set to: /home/cpu2006-1.2-ic16.0
Filesistem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 693G 27G 667G 4% /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
Continued on next page
Lenovo Group Limited
Lenovo ThinkServer TS150
(2.90 GHz, Intel Xeon E3-1260L v5)

SPECfp2006 = 98.7
SPECfp_base2006 = 96.4

Platform Notes (Continued)

hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS LENOVO FWKT32A 12/25/2015
Memory:
4x Samsung M378A1G43DB0-CPB 8 GB 2 rank 2133 MHz

Test date: Jan-2016
Hardware Availability: Oct-2015
Software Availability: Aug-2015

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2006-1.2-icl16.0/libs/32:/home/cpu2006-1.2-icl16.0/libs/64:/home/cpu2006-1.2-icl16.0/sh"
OMP_NUM_THREADS = "4"

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.gamebmk: -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

Continued on next page
Lenovo Group Limited

Lenovo ThinkServer TS150
(2.90 GHz, Intel Xeon E3-1260L v5)

**SPECfp2006 =** 98.7
**SPECfp_base2006 =** 96.4

**CPU2006 license:** 9017
**Test date:** Jan-2016
**Test sponsor:** Lenovo Group Limited
**Hardware Availability:** Oct-2015
**Tested by:** Lenovo Group Limited
**Software Availability:** Aug-2015

### Base Portability Flags (Continued)

- 453.povray: -DSPEC_CPU_LP64
- 454.calculix: -DSPEC_CPU_LP64 -nfor_main
- 459.GemsFDTD: -DSPEC_CPU_LP64
- 465.tonto: -DSPEC_CPU_LP64
- 470.lbm: -DSPEC_CPU_LP64
- 481.wrf: -DSPEC_CPU_LP64
- 482.sphinx3: -DSPEC_CPU_LP64
- 483.sphinx4: -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

### Peak Portability Flags

Same as Base Portability Flags
**Lenovo Group Limited**

Lenovo ThinkServer TS150  
(2.90 GHz, Intel Xeon E3-1260L v5)  

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>98.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>96.4</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 9017  
**Test sponsor:** Lenovo Group Limited  
**Tested by:** Lenovo Group Limited  
**Test date:** Jan-2016  
**Hardware Availability:** Oct-2015  
**Software Availability:** Aug-2015

### 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-ilk32
- 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) -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
- 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) -unroll2 -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 -opt-malloc-options=3 -auto -unroll4

**Benchmarks using both Fortran and C:**

Continued on next page
Lenovo Group Limited

Lenovo ThinkServer TS150
(2.90 GHz, Intel Xeon E3-1260L v5)

SPECfp2006 = 98.7
SPECfp_base2006 = 96.4

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Test date: Jan-2016
Tested by: Lenovo Group Limited
Hardware Availability: Oct-2015
Software Availability: Aug-2015

Peak Optimization Flags (Continued)

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

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Originally published on 9 February 2016.