## Lenovo Global Technology

**Lenovo ThinkServer TS150**  
*(3.30 GHz, Intel Xeon E3-1225 v6)*

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>98.7</td>
<td>97.2</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon E3-1225 v6  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
- **CPU MHz:** 3300  
- **FPU:** Integrated  
- **CPU(s) enabled:** 4 cores, 1 chip, 4 cores/chip  
- **CPU(s) orderable:** 1 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 7.3 (Maipo)  
  Kernel 3.10.0-514.el7.x86_64  
- **Compiler:**  
  C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux;  
  Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux  
- **Auto Parallel:** Yes  
- **File System:** xfs

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**Continued on next page**
**Lenovo Global Technology**

**SPEC CFP2006 Result**

**Lenovo ThinkServer TS150**

(3.30 GHz, Intel Xeon E3-1225 v6)

**SPECfp2006 =** 98.7

**SPECfp_base2006 =** 97.2

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**CPU2006 license:** 9017

**Test sponsor:** Lenovo Global Technology

**Test date:** Aug-2017

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**L3 Cache:** 8 MB I+D on chip per chip

**System State:** Run level 3 (multi-user)

**Other Cache:** None

**Base Pointers:** 64-bit

**Memory:** 64 GB (4 x 16 GB 2Rx8 PC4-2400T-U)

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

**Disk Subsystem:** 1 x 800 GB SATA SSD

**Other Hardware:** None

**Software Availability:** Apr-2017

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### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>208</td>
<td>93.6</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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**Operating System Notes**

Stack size set to unlimited using "ulimit -s unlimited"

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**Platform Notes**

BIOS configuration:
Intel Virtualization Technology set to Enabled
VT-d set to Enabled
ICE Performance Mode set to Full Speed
Sysinfo program /home/cpu2006-1.2-ic17.0u3/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on localhost.localdomain Wed Aug 2 15:46:56 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: Continued on next page
Lenovo Global Technology

Lenovo ThinkServer TS150
(3.30 GHz, Intel Xeon E3-1225 v6)

CPU2006 license: 9017
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

SPECfp2006 = 98.7
SPECfp_base2006 = 97.2

Test date: Aug-2017
Hardware Availability: Apr-2017
Software Availability: Apr-2017

Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E3-1225 v6 @ 3.30GHz
  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
cautions.)
cpu cores : 4
siblings : 4
  physical 0: cores 0 1 2 3
cache size : 8192 KB

From /proc/meminfo
  MemTotal:       65910656 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*

  os-release:
  NAME="Red Hat Enterprise Linux Server"
  VERSION="7.3 (Maipo)"
  ID="rhel"
  ID_LIKE="fedora"
  VERSION_ID="7.3"
  PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
  ANSI_COLOR="0;31"
  CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
  redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
  system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

uname -a:
  Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13
  EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 2 11:31

SPEC is set to: /home/cpu2006-1.2-ic17.0u3
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda4      xfs   693G  11G  683G   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 SM BIOS" standard.

BIOS LENOVO S06KT03A 02/07/2017
Memory:
  4x Samsung M378A2K43BB1-CRC 16 GB 2 rank 2400 MHz

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SPEC CFP2006 Result

Lenovo Global Technology
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Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006-1.2-ic17.0u3/lib/ia32:/home/cpu2006-1.2-ic17.0u3/lib/intel64:/home/cpu2006-1.2-ic17.0u3/sh10.2"
OMP_NUM_THREADS = "4"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run

Base Compiler Invocation

C benchmarks:
icc -m64
C++ benchmarks:
licpc -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
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Test sponsor: Lenovo Global Technology
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Test date: Aug-2017
Hardware Availability: Apr-2017
Software Availability: Apr-2017

Base Portability Flags (Continued)

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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

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:

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**Lenovo Global Technology**  
Lenovo ThinkServer TS150  
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**CPU2006 license:** 9017  
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### Peak Optimization Flags (Continued)

<table>
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<th>C++ benchmarks:</th>
</tr>
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<tbody>
<tr>
<td>433.milc: basepeak = yes</td>
</tr>
<tr>
<td>470.lbm: basepeak = yes</td>
</tr>
<tr>
<td>482.sphinx3: basepeak = yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fortran benchmarks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -fno-alias -auto-ilp32</td>
</tr>
<tr>
<td>447.dealII: basepeak = yes</td>
</tr>
<tr>
<td>450.soplex: basepeak = yes</td>
</tr>
<tr>
<td>453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -unroll4 -ansi-alias</td>
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<td>416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-</td>
</tr>
<tr>
<td>434.zeusmp: basepeak = yes</td>
</tr>
<tr>
<td>437.leslie3d: basepeak = yes</td>
</tr>
<tr>
<td>459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -unroll2 -inline-level=0 -qopt-prefetch -parallel</td>
</tr>
<tr>
<td>465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -inline-calloc -qopt-malloc-options=3 -auto -unroll4</td>
</tr>
</tbody>
</table>

**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 |

Continued on next page
Lenovo Global Technology  
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**SPECfp2006 = 98.7**  
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**Software Availability:** Apr-2017

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**Peak Optimization Flags (Continued)**

481.wrf: basepeak = yes

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The flags files that were used to format this result can be browsed at


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You can also download the XML flags sources by saving the following links:

- [http://www.spec.org/cpu2006/flags/Lenovo-Platform-Settings-V1.2-KBL-revC.xml](http://www.spec.org/cpu2006/flags/Lenovo-Platform-Settings-V1.2-KBL-revC.xml)

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For other inquiries, please contact webmaster@spec.org.

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