Lenovo Group Limited

Lenovo System x3250 M5
(Intel Xeon E3-1285L v3, 3.10 GHz)

SPECint®2006 = 61.8
SPECint_base2006 = 59.6

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

Hardware

| CPU Name: | Intel Xeon E3-1285L v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.90 GHz |
| CPU MHz: | 3100 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip, 2 threads/core |
| 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 |
| L3 Cache: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 16 GB (4 x 4 GB 2Rx8 PC3-12800U-13) |
| Disk Subsystem: | 1 x 1000 GB SATA, 7200 RPM |
| Other Hardware: | None |

Software

| Operating System: | Red Hat Enterprise Linux Server release 6.5 (Santiago) |
| Compiler: | C/C++ Version 14.0.0.080 of Intel C++ Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | ext4 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V10.0 |
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**SPEC CINT2006 Result**

**SPECint2006 = 61.8**

**SPECint_base2006 = 59.6**

**Test date:** Dec-2014

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** Jul-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Nov-2013

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## 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>
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<tbody>
<tr>
<td>Base</td>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>400.perlbench</strong></td>
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<td>43.8</td>
<td>224</td>
<td>43.6</td>
<td>224</td>
<td>43.6</td>
<td>186</td>
<td>52.6</td>
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<td>29.3</td>
<td>329</td>
<td>29.3</td>
<td>330</td>
<td>29.3</td>
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<td>29.5</td>
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<tr>
<td><strong>403.mcf</strong></td>
<td>210</td>
<td>38.4</td>
<td>210</td>
<td>38.4</td>
<td>211</td>
<td>38.2</td>
<td>207</td>
<td>38.9</td>
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<td><strong>429.gcc</strong></td>
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<td>29.3</td>
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<td>29.3</td>
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<td><strong>456.hmmer</strong></td>
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<td>37.0</td>
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<td><strong>471.omnetpp</strong></td>
<td>224</td>
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<td>27.9</td>
<td>186</td>
<td>33.6</td>
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<tr>
<td><strong>473.astar</strong></td>
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<td>36.4</td>
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<td>37.0</td>
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<td><strong>483.xalancbmk</strong></td>
<td>94.5</td>
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<td>94.8</td>
<td>72.8</td>
<td>91.9</td>
<td>75.1</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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## Submit Notes

The config file option 'submit' was used.

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## Operating System Notes

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

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## Platform Notes

**BIOS setting:**
Operating Mode set to Maximum Performance
Sysinfo program /home/SPEC/config/sysinfo_rev6818
$Rev: 6818 $ $Date:: 2012-07-17 $ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Wed Dec 10 19:41:00 2014

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 E3-1285L v3 @ 3.10GHz
  - 1 "physical id"s (chips)
  - 8 "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 : 8

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Platform Notes (Continued)

physical 0: cores 0 1 2 3

From /proc/meminfo
MemTotal: 16165980 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)

uname -a:
Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
EST 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 8 20:07

SPEC is set to: /home/SPEC

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_home ext4 860G 20G 797G 3% /home

Additional information from dmidecode:
BIOS IBM -[JUE115CUS-1.06]- 11/11/2014
Memory:
4x Hynix/Hyundai HMT351U7EFR8A-PB 4 GB 1600 MHz 2 rank

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/SPEC/libs/32:/home/SPEC/libs/64:/home/SPEC/sh"
OMP_NUM_THREADS = "4"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
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Base Compiler Invocation

C benchmarks:  
  icc  -m64

C++ benchmarks:  
  icpc  -m64

Base Portability Flags

-DSPEC_CPU_LP64
-DSPEC_CPU_LINUX_X64

Base Optimization Flags

C benchmarks:  
  -xCORE-AVX2  -ipo  -O3  -no-prec-div  -parallel  -opt-prefetch  -auto-p32

C++ benchmarks:  
  -xCORE-AVX2  -ipo  -O3  -no-prec-div  -opt-prefetch  -auto-p32
  -Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:  
  403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

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Peak Compiler Invocation (Continued)

400.perlbench: icc -m32
445.gobmk: icc -m32

C++ benchmarks (except as noted below):
icpc -m32
473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-op3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-op3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-cALLOC
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
-opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias
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Peak Optimization Flags (Continued)

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4

462.libquantum: basepeak = yes
464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-ra-region-strategy=block -ansi-alias
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch
-ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-HSW-A.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-HSW-A.xml

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

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