# Lenovo System x3950 X6

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

### SPECint 2006

**SPECint_base2006 =** 68.2

### Hardware

- **CPU Name:** Intel Xeon E7-8894 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.40 GHz
- **CPU MHz:** 2400
- **FPU:** Integrated
- **CPU(s) enabled:** 192 cores, 8 chips, 24 cores/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:** 60 MB I+D on chip per chip
- **Memory:** 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
- **Disk Subsystem:** 1 x 800 GB SATA SSD
- **Other Cache:** None
- **Other Hardware:** None

### Software

- **Operating System:** SUSE Linux Enterprise Server 12 SP1 (x86_64)  
  *Kernel 3.12.49-11-default*
- **Compiler:** C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux
- **Auto Parallel:** Yes
- **File System:** btrfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32/64-bit
- **Peak Pointers:** Not Applicable
- **Other Software:** Microquill SmartHeap V10.2
## Lenovo Group Limited

Lenovo System x3950 X6  
(Intel Xeon E7-8894 v4, 2.40 GHz)

### SPECint2006 = Not Run  
\[ \text{SPECint}_\text{base2006} = 68.2 \]

**CPU2006 license:** 9017  
**Test date:** Jan-2017

**Test sponsor:** Lenovo Group Limited  
**Hardware Availability:** Feb-2017

**Tested by:** Lenovo Group Limited  
**Software Availability:** Sep-2016

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>50.6</td>
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<tr>
<td>473.astar</td>
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<td>34.1</td>
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<tr>
<td>483.xalancbmk</td>
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<td>74.9</td>
<td>91.5</td>
<td>75.4</td>
<td>93.3</td>
<td>74.0</td>
</tr>
</tbody>
</table>

### Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/transparent_hugepage/enabled

### Platform Notes

BIOS configuration:  
Memory Mode set to Independent  
Operating Mode set to Maximum Performance  
Hyper-Threading set to Disable  
Syisin program /home/cpu2006-1.2-ic17.0/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on Draco-8S Sun Jan 22 05:35:46 2017

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 E7-8894 v4 @ 2.40GHz  
- 8 "physical id"s (chips)  
- 192 "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 : 24  
- siblings : 24

Continued on next page
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Lenovo System x3950 X6
(Intel Xeon E7-8894 v4, 2.40 GHz)

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**Test date:** Jan-2017  
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**Platform Notes (Continued)**

```plaintext
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 4: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 5: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 6: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 7: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
cache size : 61440 KB

From /proc/meminfo
MemTotal: 1058550028 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 1
  # 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-SP1"
    VERSION_ID="12.1"
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
  Linux Draco-8S 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
  (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 22 05:32

SPEC is set to: /home/cpu2006-1.2-ic17.0
Files
type size used avail use% mounted on
/dev/sda2 btrfs 744G 30G 710G 5% /home

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
Continued on next page
```
**Lenovo Group Limited**

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**SPEC CINT2006 Result**

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**Platform Notes (Continued)**

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.

**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-ic17.0/libs/32:/home/cpu2006-1.2-ic17.0/libs/64:/home/cpu2006-1.2-ic17.0/sh10.2"
OMP_NUM_THREADS = "192"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

**Base Compiler Invocation**

- C benchmarks: `icc -m64`
- C++ benchmarks: `icpc -m64`

**Base Portability Flags**

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#### Base Optimization Flags

* C benchmarks:  
  ```bash  
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch  
  -auto-p32  
  ```

* C++ benchmarks:  
  ```bash  
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
  -Wl,-z,muldefs -L/sh10.2 -lsmartheap64  
  ```

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#### Base Other Flags

* C benchmarks:  
  ```bash  
  403.gcc: -Dalloca=_alloca  
  ```

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The flags files that were used to format this result can be browsed at  
[http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html)  
[http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-BDW-D.html](http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-BDW-D.html)  
You can also download the XML flags sources by saving the following links:  
[http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml)  
[http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-BDW-D.xml](http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-BDW-D.xml)  

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