Sugon
Sugon I610-G20 (Intel Xeon E5-2699 v3) SPECint®2006 = 69.1
SPECint_base2006 = 66.9
CPU2006 license: 9046
Test sponsor: Sugon
Tested by: Sugon

CPU Name: Intel Xeon E5-2699 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2300
FPU: Integrated
CPU(s) enabled: 36 cores, 2 chips, 18 cores/chip
CPU(s) orderable: 1/36E2 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: 45 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 2 x 250 GB SATA, RAID 0

Operating System: SUSE Linux Enterprise Server 12 (x86_64)
Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.2

SPECint2006 = 69.1
## SPEC CINT2006 Result

### Sugon

Sugon I610-G20 (Intel Xeon E5-2699 v3)

**SPECint2006 =** 69.1  
**SPECint_base2006 =** 66.9

**CPU2006 license:** 9046  
**Test date:** Nov-2015  
**Test sponsor:** Sugon  
**Tested by:** Sugon  

### Results Table

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<td>82.7</td>
</tr>
</tbody>
</table>

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

### Submit Notes

The config file option 'submit' was used.

### Operating System Notes

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

### Platform Notes

BIOS configuration:
- Set Energy Performance set to Performance
- Set QPI (QuickPath Interconnect) Snoop Mode as "Home Snoop" (set COD disabled and Early Snoop Disabled)
- Set Hyper-Threading to Disabled
- POR Disabled
- DDR speed set at 2133 MHz
- Baseboard Management Controller used to adjust the fan speed to performance mode
- Sysinfo program /home/cpu2006/config/sysinfo.rev6914

$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1 running on localhost Mon Nov 30 17:46:07 2015

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 E5-2699 v3 @ 2.30GHz
- 2 "physical id"s (chips)
- 36 "processors"

Continued on next page
SPEC CINT2006 Result

Sugon

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SPECint2006 = 69.1
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CPU2006 license: 9046
Test sponsor: Sugon
Tested by: Sugon

Test date: Nov-2015
Hardware Availability: May-2015
Software Availability: Sep-2015

Platform Notes (Continued)

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 : 18
siblings : 18
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 46080 KB

From /proc/meminfo
MemTotal: 264561740 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 localhost 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 Nov 28 00:03

SPEC is set to: /home/cpu2006

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.

BIOS American Megatrends Inc. 083 01/16/2015
Memory:
16x Hynix Semiconductor HMA42GR7AFR4N-UM 16 GB 2 rank 2400 MHz, configured at 2133 MHz
8x NO DIMM NO DIMM

Continued on next page
SPEC CINT2006 Result

Sugon
Sugon I610-G20 (Intel Xeon E5-2699 v3)

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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,scatter"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "36"

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/enable

Base Compiler Invocation

C benchmarks:
icc  -m64

C++ benchmarks:
icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -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
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

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/home/cpu2006/sh -lsmartheap64
**SPEC CINT2006 Result**

**Sugon**  
Sugon I610-G20 (Intel Xeon E5-2699 v3)  

| SPECint2006 = | 69.1 |
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- **Test sponsor:** Sugon  
- **Software Availability:** Sep-2015  
- **Tested by:** Sugon

### Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

### Peak Compiler Invocation

C benchmarks (except as noted below):

- `icc -m64`  

- **400.perlbench:** `icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

C++ benchmarks (except as noted below):

- `icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

- **473.astar:** `icpc -m64`

### Peak Portability Flags

400.perlbench: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32`  
401.bzip2: `-DSPEC_CPU_LP64`

403.gcc: `-DSPEC_CPU_LP64`

429.mcf: `-DSPEC_CPU_LP64`

445.gobmk: `-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`

471.omnetpp: `-D_FILE_OFFSET_BITS=64`

473.astar: `-DSPEC_CPU_LP64`

483.xalancbmk: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`

### Peak Optimization Flags

C benchmarks:

400.perlbench: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass 1`  

- `ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`

- `par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch`  

- `ansi-alias`

401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass 1`  

- `ipo(pass 2) -O3(pass 2) -no-prec-div`

- `par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32`

- `opt-prefetch -ansi-alias`

Continued on next page
**SPEC CINT2006 Result**

**Sugon**

**Sugon I610-G20 (Intel Xeon E5-2699 v3)**

| SPECint2006 | 69.1 |
| SPECint_base2006 | 66.9 |

**CPU2006 license:** 9046  
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**Tested by:** Sugon

---

**Peak Optimization Flags (Continued)**

- **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**: basepeak = yes

- **456.hmmer**: basepeak = yes

- **458.sjeng**:  
  -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

- **462.libquantum**: basepeak = yes

- **464.h264ref**: basepeak = yes

---

**C++ benchmarks:**

- **471.omnetpp**:  
  -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)  
  -opt-ra-region-strategy=block -ansi-alias  
  -Wl,-z,muldefs -L/home/cpu2006/sh -lsmartheap

- **473.astar**: basepeak = yes

- **483.xalancbmk**:  
  -xCORE-AVX2  
  -ipo  
  -O3  
  -no-prec-div  
  -opt-prefetch  
  -ansi-alias -Wl,-z,muldefs -L/home/cpu2006/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-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/Sugon-Platform-Settings-V1.2-HSW-revA.20141203.xml
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For other inquiries, please contact webmaster@spec.org.

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