Huawei

Huawei XH622 V3 (Intel Xeon E5-2670 v3)

| SPECint®2006 | 57.5 |
| SPECint_base2006 | 55.2 |

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
CPU Name: Intel Xeon E5-2670 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz: 2300
FPU: Integrated
CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip
CPU(s) orderable: 1.2 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: 30 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64
Compiler: C/C++: Version 15.0.0.090 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
## SPEC CINT2006 Result

### Huawei

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<table>
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<tr>
<th>Benchmark</th>
<th>Seconds</th>
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<td>4.01</td>
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<td>473.astar</td>
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<tr>
<td>483.xalancbmk</td>
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<td>59.6</td>
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<td>58.7</td>
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<td>118</td>
<td>58.7</td>
<td>116</td>
<td>59.5</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 Power Efficiency Mode to Custom
- Set Snoop Mode to ES mode
- Set HT to Disable

### Sysinfo program
```
/spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Wed Feb 11 20:51:51 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 E5-2670 v3 @ 2.30GHz
- 2 "physical id"s (chips)
- 24 "processors"
- cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
Huawei XH622 V3 (Intel Xeon E5-2670 v3)

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CPU2006 license: 3175
Test sponsor: Huawei
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Platform Notes (Continued)

cpu cores : 12
siblings : 12
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB

From /proc/meminfo
MemTotal: 263720560 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 11 20:39

SPEC is set to: /spec15
Filesystem  Type  Size  Used Avail Use% Mounted on
/dev/sda1 ext4  433G 63G 349G 16% /

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 Insysde Corp. 1.17 09/03/2014
Memory:
8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz
8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
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Test date: Feb-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

General Notes
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec15/libs/32:/spec15/libs/64:/spec15/sh"
OMP_NUM_THREADS = "24"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
The Huawei XH622 V3 and Huawei XH628 V3 are electronically equivalent.
The results have been measured on a Huawei XH628 V3 model.

Base Compiler Invocation

C benchmarks:
  icc  -m64

C++ benchmarks:
  icpc  -m64

Base Portability Flags

C benchmarks:
  -DSPEC_CPU_LP64
  -DSPEC_CPU_LINUX_X64

C++ benchmarks:
  -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/sh -lsmartheap64
**SPEC CINT2006 Result**

**Huawei**
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**SPECint2006 = 57.5**
**SPECint_base2006 = 55.2**

**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/composer_xe_2015/lib/ia32

C++ benchmarks (except as noted below):
- icpc -m64

471.omnetpp: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

**Peak Portability Flags**

- 400.perlbench: -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
- 473.astar: -DSPEC_CPU_LP64
- 483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

**Peak Optimization Flags**

C benchmarks:
- 400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -ansi-alias

Continued on next page
Huawei XH622 V3 (Intel Xeon E5-2670 v3)

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**Hardware Availability:** Sep-2014
**Software Availability:** Sep-2014

### Peak Optimization Flags (Continued)

- **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(pass 1)
  -ipo(pass 2)
  -O3(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)
  -O3(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:** basepeak = yes

- **483.xalancbmk:** basepeak = yes

### Peak Other Flags

#### C benchmarks:

- **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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.xml

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

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