Huawei XH622 V3 (Intel Xeon E5-2609 v3)

**SPECint®2006 =** 34.8  
**SPECint_base2006 =** 33.5

**Hardware**
- **CPU Name:** Intel Xeon E5-2609 v3
- **CPU Characteristics:**
  - CPU MHz: 1900
  - FPU: Integrated
  - CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip
  - Other Cache: None
  - Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
  - Disk Subsystem: 1 x 500 GB SATA, 7200 RPM

**Software**
- **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
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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Results Table

<table>
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<tr>
<th>Benchmark</th>
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<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
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<td>401.bzip2</td>
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<td>13.8</td>
<td>701</td>
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<td>429.mcf</td>
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<td>445.gobmk</td>
<td>667</td>
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<td>456.hmmer</td>
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<td>37.6</td>
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<td>462.libquantum</td>
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<td>464.h264ref</td>
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<td>471.omnetpp</td>
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<td>15.0</td>
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<td>19.6</td>
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<tr>
<td>473.astar</td>
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<td>18.2</td>
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<td>18.1</td>
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<tr>
<td>483.xalancbmk</td>
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<td>36.9</td>
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<td>36.8</td>
<td>187</td>
<td>36.9</td>
<td></td>
<td></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
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $ e3fbb8667b5a285932ceab81e8219e1
running on localhost.localdomain Thu Mar 12 05:31:35 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 E5-2609 v3 @ 1.90GHz
  2 "physical id"s (chips)
  12 "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 : 6

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Platform Notes (Continued)

siblings : 6
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB

From /proc/meminfo
MemTotal: 263721952 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 Mar 12 05:30

SPEC is set to: /spec15

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 Insyde Corp. 1.17 09/03/2014
Memory:
8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz, configured at 1600 MHz
8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1600 MHz

(End of data from sysinfo program)
Huawei

Huawei XH622 V3 (Intel Xeon E5-2609 v3)

**SPECint2006 =** 34.8

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CPU2006 license: 3175
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Tested by: Huawei

**Test date:** Mar-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 = "12"

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
- numactl --interleave=all runspec <etc>

The Huawei XH622 V3 and Huawei XH628 V3 are electronically equivalent.
The results have been measured on a Huawei XH622 V3 model.

**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 -DSPEC_CPU_LINUX
- 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/sh -lsmartheap64
## SPEC CINT2006 Result

### Huawei

**Huawei XH622 V3 (Intel Xeon E5-2609 v3)**

<table>
<thead>
<tr>
<th><strong>SPECint2006</strong></th>
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<tbody>
<tr>
<td><strong>SPECint_base2006</strong></td>
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- **CPU2006 license:** 3175
- **Test date:** Mar-2015
- **Test sponsor:** Huawei
- **Tested by:** Huawei
- **Hardware Availability:** Sep-2014
- **Software Availability:** Sep-2014

### 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
  - 445.gobmk: 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
- 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
  - 401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alias

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Huawei XH622 V3 (Intel Xeon E5-2609 v3)

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CPU2006 license: 3175
Test sponsor: Huawei
Test date: Mar-2015
Hardware Availability: Sep-2014
Tested by: Huawei
Software Availability: Sep-2014

Peak Optimization Flags (Continued)

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

**429.mcf**: basepeak = yes

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

**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

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
## Huawei XH622 V3 (Intel Xeon E5-2609 v3)

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| SPECint_base2006 = | 33.5 |

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<th>Specification</th>
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For other inquiries, please contact webmaster@spec.org.

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