## SPEC® CINT2006 Result

### Cisco Systems

Cisco UCS B200 M4 (Intel Xeon E5-2623 v4 2.60 GHz)

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>9019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor:</td>
<td>Cisco Systems</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Cisco Systems</td>
</tr>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2623 v4</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2600</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>8 cores, 2 chips, 4 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1.2 chips</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>10 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>2 x 1.2 TB SAS 10K RPM HDD</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Hardware

| SPECint®2006 = | 57.6 |
| SPECint_base2006 = | 55.7 |

### Software

| Operating System: | SUSE Linux Enterprise Server 12 SP1 (x86_64) 3.12.49-11-default |
| 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 |

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info@spec.org
http://www.spec.org/
Cisco Systems
Cisco UCS B200 M4 (Intel Xeon E5-2623 v4 2.60 GHz)

CPU2006 license: 9019
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Ratio</th>
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<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>264</td>
<td>37.1</td>
<td>262</td>
<td>37.3</td>
<td>261</td>
<td>37.4</td>
<td>239</td>
<td>40.8</td>
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<tr>
<td>401.bzip2</td>
<td>413</td>
<td>23.4</td>
<td>412</td>
<td>23.4</td>
<td>412</td>
<td>23.4</td>
<td>405</td>
<td>23.8</td>
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<tr>
<td>403.gcc</td>
<td>248</td>
<td>32.5</td>
<td>249</td>
<td>32.4</td>
<td>247</td>
<td>32.6</td>
<td>253</td>
<td>31.9</td>
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<tr>
<td>429.mcf</td>
<td>149</td>
<td>61.2</td>
<td>151</td>
<td>60.3</td>
<td>150</td>
<td>60.9</td>
<td>147</td>
<td>62.0</td>
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<tr>
<td>445.gobmk</td>
<td>389</td>
<td>27.0</td>
<td>390</td>
<td>26.9</td>
<td>391</td>
<td>26.8</td>
<td>390</td>
<td>26.9</td>
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<tr>
<td>456.hmmer</td>
<td>118</td>
<td>78.8</td>
<td>118</td>
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<td>118</td>
<td>78.8</td>
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<td>78.8</td>
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<td>458.sjeng</td>
<td>387</td>
<td>31.3</td>
<td>387</td>
<td>31.3</td>
<td>387</td>
<td>31.3</td>
<td>383</td>
<td>31.6</td>
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<tr>
<td>462.libquantum</td>
<td>6.72</td>
<td>3080</td>
<td>6.76</td>
<td>3070</td>
<td>6.76</td>
<td>3060</td>
<td>6.72</td>
<td>3080</td>
</tr>
<tr>
<td>464.hmmer</td>
<td>406</td>
<td>54.4</td>
<td>406</td>
<td>54.5</td>
<td>407</td>
<td>54.4</td>
<td>406</td>
<td>54.4</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>283</td>
<td>22.1</td>
<td>283</td>
<td>22.1</td>
<td>283</td>
<td>22.0</td>
<td>236</td>
<td>26.5</td>
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<tr>
<td>473.astar</td>
<td>218</td>
<td>32.1</td>
<td>217</td>
<td>32.4</td>
<td>219</td>
<td>32.1</td>
<td>218</td>
<td>32.2</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>105</td>
<td>65.4</td>
<td>107</td>
<td>64.5</td>
<td>106</td>
<td>65.2</td>
<td>95.1</td>
<td>72.6</td>
</tr>
</tbody>
</table>

Submit Notes

The config file option 'submit' was used.

Operating System Notes

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

Platform Notes

BIOS Settings:
Intel Hyper-Threading Technology option set to Disabled
CPU performance set to Enterprise
Power Technology set to Energy Efficient
Energy Performance BIAS setting set to Balanced Performance
Memory RAS configuration set to Maximum Performance
Memory Power Saving Mode set to Disabled
QPI Snoop Mode set to Home Directory Snoop with OSB
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-wvrl Tue Jan 24 06:01:37 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 E5-2623 v4 @ 2.60GHz
2 "physical id"s (chips)

Continued on next page
SPEC CINT2006 Result

Cisco Systems
Cisco UCS B200 M4 (Intel Xeon E5-2623 v4 2.60 GHz)

| SPECint2006 | 57.6 |
| SPECint_base2006 | 55.7 |

CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Test date: Jan-2017
Hardware Availability: Apr-2016
Software Availability: Dec-2015

Platform Notes (Continued)

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 : 4
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB

From /proc/meminfo
MemTotal: 264409220 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:
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 23 14:42

SPEC is set to: /opt/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 xfs 2.2T 14G 2.2T 1% /

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 Cisco Systems, Inc. B200M4.3.1.3f.0.110320162243 11/03/2016
Memory:
16x OxCE00 M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz
8x NO DIMM NO DIMM
Cisco Systems
Cisco UCS B200 M4 (Intel Xeon E5-2623 v4 2.60 GHz)

SPEC2006 = 57.6
SPECint_base2006 = 55.7

CPU2006 license: 9019
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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,compact"
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"
OMP_NUM_THREADS = "8"

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/enabled

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/sh -lsmartheap64
Cisco UCS B200 M4 (Intel Xeon E5-2623 v4 2.60 GHz)

| SPECint2006 =   | 57.6 |
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**CPU2006 license:** 9019  
**Test date:** Jan-2017

**Test sponsor:** Cisco Systems  
**Hardware Availability:** Apr-2016

**Tested by:** Cisco Systems  
**Software Availability:** Dec-2015

### Peak Compiler Invocation

C benchmarks (except as noted below):

<table>
<thead>
<tr>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>icc -m64</code></td>
</tr>
<tr>
<td><code>icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin</code></td>
</tr>
<tr>
<td><code>icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin</code></td>
</tr>
</tbody>
</table>

C++ benchmarks (except as noted below):

<table>
<thead>
<tr>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin</code></td>
</tr>
</tbody>
</table>

### Peak Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td><code>-D_FILE_OFFSET_BITS=64</code> <code>-DSPEC_CPU_LINUX_IA32</code></td>
</tr>
<tr>
<td>401.bzip2</td>
<td><code>-DSPEC_CPU_LP64</code></td>
</tr>
<tr>
<td>403.gcc</td>
<td><code>-DSPEC_CPU_LP64</code></td>
</tr>
<tr>
<td>429.mcf</td>
<td><code>-DSPEC_CPU_LP64</code></td>
</tr>
<tr>
<td>445.gobmk</td>
<td><code>-D_FILE_OFFSET_BITS=64</code> <code>-DSPEC_CPU_LP64</code></td>
</tr>
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<td>456.hmmer</td>
<td><code>-DSPEC_CPU_LP64</code></td>
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<td>462.libquantum</td>
<td><code>-DSPEC_CPU_LP64</code> <code>-DSPEC_CPU_LINUX</code></td>
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<td>464.h264ref</td>
<td><code>-DSPEC_CPU_LP64</code></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td><code>-D_FILE_OFFSET_BITS=64</code></td>
</tr>
<tr>
<td>473.astar</td>
<td><code>-DSPEC_CPU_LP64</code></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td><code>-D_FILE_OFFSET_BITS=64</code> <code>-DSPEC_CPU_LINUX</code></td>
</tr>
</tbody>
</table>

### Peak Optimization Flags

C benchmarks:

<table>
<thead>
<tr>
<th>Command</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td><code>-xCORE-AVX2(pass 2)</code> <code>-prof-gen:threadsafe(pass 1)</code> <code>-ipo(pass 2)</code> <code>-03(pass 2)</code> <code>-no-prec-div(pass 2)</code> <code>-par-num-threads=1(pass 1)</code> <code>-prof-use(pass 2)</code> <code>-opt-prefetch</code> <code>-ansi-alias</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Command</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>401.bzip2</td>
<td><code>-xCORE-AVX2(pass 2)</code> <code>-prof-gen:threadsafe(pass 1)</code> <code>-ipo(pass 2)</code> <code>-03(pass 2)</code> <code>-no-prec-div</code> <code>-par-num-threads=1(pass 1)</code> <code>-prof-use(pass 2)</code> <code>-auto-ilp32</code></td>
</tr>
</tbody>
</table>

Continued on next page
## Cisco Systems

Cisco UCS B200 M4 (Intel Xeon E5-2623 v4  2.60 GHz)

<table>
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<tr>
<th>SPECint2006</th>
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### CPU2006 license:
- 9019

### Test sponsor:
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### Tested by:
- Cisco Systems

**Test date:** Jan-2017

**Hardware Availability:** Apr-2016

**Software Availability:** Dec-2015

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## Peak Optimization Flags (Continued)

**401.bzip2** (continued):
- `-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:threadsafepass 1)`
- `-prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias`

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

**458.sjeng**:
- `-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) -unroll4`

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

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

### C++ benchmarks:

**471.omnetpp**:
- `-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) -ansi-alias`
- `-Wl,-z,muldefs -L/sh -lsmartheap`

**473.astar**:
- `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z, muldefs -L/sh -lsmartheap64`

**483.xalancbmk**:
- `-xCORE-AVX2 -ipo -O3 -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

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</tbody>
</table>

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/Cisco-Platform-Settings-V1.2-revE.xml

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

Tested with SPEC CPU2006 v1.2.