### SPECint®2006 = 65.6
### SPECint_base2006 = 62.0

**Cisco Systems**
Cisco UCS B420 M4 (Intel Xeon E5-4627 v4 2.60 GHz)

<table>
<thead>
<tr>
<th>Test sponsor</th>
<th>Cisco Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by</td>
<td>Cisco Systems</td>
</tr>
<tr>
<td>CPU2006 license</td>
<td>9019</td>
</tr>
<tr>
<td>Test date</td>
<td>Jan-2017</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>Jun-2016</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Sep-2016</td>
</tr>
</tbody>
</table>

#### SPECint2006 = 65.6

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>57.2</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>36.9</td>
</tr>
<tr>
<td>403.gcc</td>
<td>23.6</td>
</tr>
<tr>
<td>429.mcf</td>
<td>63.1</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>78.8</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>57.2</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>31.9</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>57.2</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>57.2</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>30.6</td>
</tr>
<tr>
<td>473.astar</td>
<td>32.6</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>75.7</td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon E5-4627 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.20 GHz
- **CPU MHz:** 2600
- **CPU(s) enabled:** 40 cores, 4 chips, 10 cores/chip
- **CPU(s) orderable:** 2, 4 chips
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 256 KB I+D on chip per core
- **L3 Cache:** 25 MB I+D on chip per chip
- **Memory:** 1 TB (32 x 32 GB 2Rx4 PC4-2400T-R)
- **Disk Subsystem:** 1 x 300 GB SAS, 15K RPM
- **Other Cache:** None

**Software**

- **Operating System:** SUSE Linux Enterprise Server 12 SP1 (x86_64) 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:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32/64-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** Microquill SmartHeap V10.2
Cisco Systems
Cisco UCS B420 M4 (Intel Xeon E5-4627 v4 2.60 GHz)

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

SPECint2006 = 65.6
SPECint_base2006 = 62.0

Test date: Jan-2017
Hardware Availability: Jun-2016
Software Availability: Sep-2016

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>264</td>
<td>36.9</td>
<td>265</td>
<td>36.9</td>
<td>265</td>
<td>36.8</td>
<td>231</td>
<td>42.3</td>
<td>231</td>
<td>42.3</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>410</td>
<td>23.5</td>
<td>410</td>
<td>23.5</td>
<td>409</td>
<td>23.6</td>
<td>409</td>
<td>23.6</td>
<td>408</td>
<td>23.7</td>
</tr>
<tr>
<td>403.mcf</td>
<td>235</td>
<td>34.3</td>
<td>235</td>
<td>34.3</td>
<td>235</td>
<td>34.2</td>
<td>235</td>
<td>34.2</td>
<td>236</td>
<td>34.2</td>
</tr>
<tr>
<td>429.gcc</td>
<td>144</td>
<td>63.3</td>
<td>145</td>
<td>63.1</td>
<td>145</td>
<td>63.0</td>
<td>144</td>
<td>63.2</td>
<td>144</td>
<td>63.4</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>376</td>
<td>27.9</td>
<td>377</td>
<td>27.8</td>
<td>377</td>
<td>27.8</td>
<td>371</td>
<td>28.3</td>
<td>370</td>
<td>28.3</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>118</td>
<td>78.8</td>
<td>118</td>
<td>78.7</td>
<td>118</td>
<td>78.8</td>
<td>118</td>
<td>78.8</td>
<td>118</td>
<td>78.8</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>391</td>
<td>31.0</td>
<td>390</td>
<td>31.0</td>
<td>391</td>
<td>30.9</td>
<td>380</td>
<td>31.9</td>
<td>379</td>
<td>31.9</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>3.21</td>
<td>6460</td>
<td>3.20</td>
<td>6470</td>
<td>3.22</td>
<td>6440</td>
<td>3.21</td>
<td>6460</td>
<td>3.20</td>
<td>6470</td>
</tr>
<tr>
<td>464.hmmer</td>
<td>387</td>
<td>57.2</td>
<td>388</td>
<td>57.0</td>
<td>385</td>
<td>57.5</td>
<td>387</td>
<td>57.2</td>
<td>388</td>
<td>57.0</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>207</td>
<td>30.2</td>
<td>199</td>
<td>31.4</td>
<td>204</td>
<td>30.6</td>
<td>137</td>
<td>45.7</td>
<td>137</td>
<td>45.7</td>
</tr>
<tr>
<td>473.astar</td>
<td>215</td>
<td>32.6</td>
<td>215</td>
<td>32.6</td>
<td>216</td>
<td>32.5</td>
<td>217</td>
<td>32.4</td>
<td>217</td>
<td>32.4</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>99.8</td>
<td>69.2</td>
<td>100</td>
<td>69.0</td>
<td>99.9</td>
<td>69.1</td>
<td>91.5</td>
<td>75.4</td>
<td>91.1</td>
<td>75.7</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 Settings:
Intel Hyper-Threading Technology option set to Disabled
CPU performance set to Enterprise
Power Technology set to Energy Efficient
Energy Performance 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.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-1fno Mon Jan 30 09:21:22 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 E5-4627 v4 @ 2.60GHz
4 "physical id"s (chips)

Continued on next page
Cisco Systems  
Cisco UCS B420 M4 (Intel Xeon E5-4627 v4 2.60 GHz)  

SPECint2006 = 65.6  
SPECint_base2006 = 62.0  

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

Test date: Jan-2017  
Hardware Availability: Jun-2016  
Software Availability: Sep-2016  

Platform Notes (Continued)  

40 "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 : 10  
siblings : 10  
physical 0: cores 0 1 2 3 4 8 9 10 11 12  
physical 1: cores 0 1 2 3 4 8 9 10 11 12  
physical 2: cores 0 1 2 3 4 8 9 10 11 12  
physical 3: cores 0 1 2 3 4 8 9 10 11 12  
cache size : 25600 KB  

From /proc/meminfo  
MemTotal: 1058699284 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"  
PPRETTY_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 30 09:18  

SPEC is set to: /opt/cpu2006-1.2  

Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda1 xfs 280G 13G 267G 5%  

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. B420M4.3.1.2.0.052320161053 05/23/2016  
Memory:  

Continued on next page
SPEC CINT2006 Result

Cisco Systems
Cisco UCS B420 M4 (Intel Xeon E5-4627 v4 2.60 GHz)

| SPECint2006 | 65.6 |
| SPECint_base2006 | 62.0 |

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

Platform Notes (Continued)

32x 0xCE00 M393A4K40BB1-CRC 32 GB 2 rank 2400 MHz
16x NO DIMM NO DIMM

(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/sh10.2"
OMP_NUM_THREADS = "40"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2
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 -qopt-prefetch -auto-p32

(Continued on next page)
Cisco Systems
Cisco UCS B420 M4 (Intel Xeon E5-4627 v4 2.60 GHz)

SPECint2006 = 65.6
SPECint_base2006 = 62.0

CPU2006 license: 9019  Test date: Jan-2017
Test sponsor: Cisco Systems  Hardware Availability: Jun-2016
Tested by: Cisco Systems  Software Availability: Sep-2016

Base Optimization Flags (Continued)

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

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_2017/linux/lib/ia32
445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks (except as noted below):
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

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: -D_FILE_OFFSET_BITS=64
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
Cisco Systems
Cisco UCS B420 M4 (Intel Xeon E5-4627 v4 2.60 GHz)

SPECint2006 = 65.6
SPECint_base2006 = 62.0

CPU2006 license: 9019
Test sponsor: Cisco Systems
Test date: Jan-2017
Tested by: Cisco Systems
Hardware Availability: Jun-2016
Software Availability: Sep-2016

Peak Optimization Flags

C benchmarks:
400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
  -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div(pass 2) -qopt-prefetch
401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
  -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div -auto-ilp32 -qopt-prefetch
403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
  -qopt-malloc-options=3 -auto-ilp32
429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
  -qopt-prefetch -auto-p32
445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
  -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div(pass 2)
456.hmmer: basepeak = yes
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
  -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div(pass 2) -unroll4
462.libquantum: basepeak = yes
464.h264ref: basepeak = yes

C++ benchmarks:
471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
  -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div(pass 2) -qopt-ra-region-strategy=block
  -Wl,-z,muldefs -L/sh10.2 -lsmartheap
473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
  -auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmartheap64
483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
  -Wl,-z,muldefs -L/sh10.2 -lsmartheap

Peak Other Flags

C benchmarks:

Continued on next page
## Cisco Systems
Cisco UCS B420 M4 (Intel Xeon E5-4627 v4 2.60 GHz)

<table>
<thead>
<tr>
<th>SPECint2006</th>
<th>65.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>62.0</td>
</tr>
</tbody>
</table>

<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>Test date:</td>
<td>Jan-2017</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Jun-2016</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Sep-2016</td>
</tr>
</tbody>
</table>

### Peak Other Flags (Continued)

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-ic17.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.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/Cisco-Platform-Settings-V1.2-revE.xml

---

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Mar  7 16:15:01 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on  7 March 2017.