Cisco Systems
Cisco UCS C240 M5 (Intel Xeon Gold 6126, 2.60GHz)

| SPECint®2006 = | 77.3 |
| SPECint_base2006 = | 73.7 |

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

| Operating System: | Red Hat Enterprise Linux Server release 7.3 (Maipo) |
| Compiler: | C/C++; Version 17.0.3.191 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 |

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon Gold 6126</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.70 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>24 cores, 2 chips, 12 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>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>19.25 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>384 GB (24 x 16 GB 2Rx4 PC4-2666V-R)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 480 GB SSD SAS</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

| SPECint2006 = 77.3 |
| SPECint_base2006 = 73.7 |

Test date: Aug-2017
Hardware Availability: Aug-2017
Software Availability: Apr-2017
Cisco Systems
Cisco UCS C240 M5 (Intel Xeon Gold 6126, 2.60GHz)

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

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>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>210</td>
<td>46.6</td>
<td>210</td>
<td>46.5</td>
<td>211</td>
<td>46.4</td>
<td>185</td>
<td>52.7</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>341</td>
<td>28.3</td>
<td>342</td>
<td>28.3</td>
<td>341</td>
<td>28.3</td>
<td>341</td>
<td>28.3</td>
</tr>
<tr>
<td>403.gcc</td>
<td>190</td>
<td>42.5</td>
<td>190</td>
<td>42.4</td>
<td>190</td>
<td>42.4</td>
<td>185</td>
<td>43.6</td>
</tr>
<tr>
<td>429.mcf</td>
<td>115</td>
<td>79.5</td>
<td>117</td>
<td>77.7</td>
<td>117</td>
<td>77.9</td>
<td>116</td>
<td>78.5</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>315</td>
<td>33.3</td>
<td>315</td>
<td>33.3</td>
<td>315</td>
<td>33.3</td>
<td>311</td>
<td>33.7</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>96.6</td>
<td>96.6</td>
<td>96.8</td>
<td>96.4</td>
<td>96.7</td>
<td>96.4</td>
<td>96.6</td>
<td>96.4</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>328</td>
<td>36.9</td>
<td>328</td>
<td>36.9</td>
<td>328</td>
<td>36.9</td>
<td>321</td>
<td>37.7</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>2.93</td>
<td>7060</td>
<td>2.95</td>
<td>7020</td>
<td>2.94</td>
<td>7060</td>
<td>2.93</td>
<td>7060</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>316</td>
<td>70.1</td>
<td>317</td>
<td>68.9</td>
<td>316</td>
<td>70.1</td>
<td>316</td>
<td>70.1</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>187</td>
<td>33.4</td>
<td>187</td>
<td>33.4</td>
<td>187</td>
<td>33.4</td>
<td>143</td>
<td>43.9</td>
</tr>
<tr>
<td>473.astar</td>
<td>183</td>
<td>38.4</td>
<td>182</td>
<td>38.6</td>
<td>182</td>
<td>38.5</td>
<td>183</td>
<td>38.3</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>87.8</td>
<td>78.6</td>
<td>87.7</td>
<td>78.7</td>
<td>87.9</td>
<td>78.5</td>
<td>79.5</td>
<td>86.8</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 HyperThreading Technology set to Disabled
CPU performance set to Enterprise
Power Performance Tuning set to OS
SNC set to Disabled
IMC Interleaving set to Auto
Patrol Scrub set to Disabled
Sysinfo program /home/cpu2006-1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on localhost.localdomain Thu Aug 31 02:08:05 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) Gold 6126 CPU @ 2.60GHz
  2 "physical id"s (chips)
  24 "processors"

Continued on next page
Cisco Systems
Cisco UCS C240 M5 (Intel Xeon Gold 6126, 2.60GHz)

SPECint2006 = 77.3
SPECint_base2006 = 73.7

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

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 : 12
  siblings : 12
  physical 0: cores 0 1 3 4 5 6 8 9 10 11 12 13
  physical 1: cores 0 1 2 3 4 5 6 8 9 11 12 13
  cache size : 19712 KB

From /proc/meminfo
  MemTotal: 394867552 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
  os-release:
    NAME="Red Hat Enterprise Linux Server"
    VERSION="7.3 (Maipo)"
    ID="rhel"
    ID_LIKE="fedora"
    VERSION_ID="7.3"
    PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
    ANSI_COLOR="0;31"
    CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
  redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
  system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

uname -a:
  Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 31 02:02

SPEC is set to: /home/cpu2006-1.2
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda3 xfs 459G 13G 447G 3% /

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. C240M5.3.1.1d.0.0615170707 06/15/2017Cisco Systems, Inc. C240M5.3.1.1d.0.0615170707 06/15/2017
  Memory:
    48x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

  (End of data from sysinfo program)
  The correct amount of Memory installed is 384 GB (24 x 16 GB)
  and the dmidecode is reporting invalid number of DIMMs installed

Continued on next page
Cisco Systems
Cisco UCS C240 M5 (Intel Xeon Gold 6126, 2.60GHz)  

| SPECint2006 = | 77.3 |
| SPECint_base2006 = | 73.7 |

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

Test date: Aug-2017  
Hardware Availability: Aug-2017  
Software Availability: Apr-2017  

Platform Notes (Continued)

Installed Memory:  
24x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"  
LD_LIBRARY_PATH = "/home/cpu2006-1.2/lib/ia32:/home/cpu2006-1.2/lib/intel64:/home/cpu2006-1.2/sh10.2"  
OMP_NUM_THREADS = "24"

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
```
## SPEC CINT2006 Result

### Cisco Systems

Cisco UCS C240 M5 (Intel Xeon Gold 6126, 2.60GHz)

| SPECint2006 = | 77.3 |
| SPECint_base2006 = | 73.7 |

**CPU2006 license:** 9019  
**Test date:** Aug-2017  
**Test sponsor:** Cisco Systems  
**Hardware Availability:** Aug-2017  
**Tested by:** Cisco Systems  
**Software Availability:** Apr-2017

### 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 C240 M5 (Intel Xeon Gold 6126, 2.60GHz)

**SPECint2006 = 77.3**
**SPECint_base2006 = 73.7**

**CPU2006 license:** 9019  
**Test date:** Aug-2017  
**Test sponsor:** Cisco Systems  
**Hardware Availability:** Aug-2017  
**Tested by:** Cisco Systems  
**Software Availability:** Apr-2017

### 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)

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

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

### Peak Other Flags

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 -lsmartheap64
Cisco Systems
Cisco UCS C240 M5 (Intel Xeon Gold 6126, 2.60GHz)

SPECint2006 = 77.3
SPECint_base2006 = 73.7

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

Test date: Aug-2017
Hardware Availability: Aug-2017
Software Availability: Apr-2017

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-revF.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revH.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-revF.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revH.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 Wed Sep 20 11:03:34 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 September 2017.