Cisco UCS C210 M2 (Intel Xeon E5606, 2.13 GHz)

SPECint\_rate2006 = 175
SPECint\_rate\_base2006 = 166

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

Software
Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
Auto Parallel: No
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01

Hardware
CPU Name: Intel Xeon E5606
CPU Characteristics:
CPU MHz: 2133
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1.2 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: 8 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx4 PC3L-10600R-9, ECC)
Disk Subsystem: 600 GB SAS 10K RPM
Other Hardware: None

Test date: Jan-2012
Hardware Availability: Mar-2011
Software Availability: Dec-2011

Tested by: Cisco Systems
Hardware Availability: Mar-2011
Software Availability: Dec-2011

Test sponsor: Cisco Systems

400.perlbench
401.bzip2
403.gcc
429.mcf
445.gobmk
456.hmmer
458.sjeng
462.libquantum
464.h264ref
471.omnetpp
473.astar
483.xalancbmk

SPECint\_rate2006 = 175
SPECint\_rate\_base2006 = 166
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</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>Base</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400.perlbench</td>
<td>8</td>
<td>615</td>
<td>127</td>
<td>612</td>
<td>128</td>
<td>612</td>
<td>128</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>8</td>
<td>925</td>
<td>83.5</td>
<td>925</td>
<td>83.4</td>
<td>924</td>
<td>83.5</td>
<td>846</td>
<td>91.3</td>
<td>848</td>
<td>91.1</td>
</tr>
<tr>
<td>403.gcc</td>
<td>8</td>
<td>560</td>
<td>115</td>
<td>555</td>
<td>116</td>
<td>560</td>
<td>115</td>
<td>560</td>
<td>115</td>
<td>566</td>
<td>114</td>
</tr>
<tr>
<td>429.mcf</td>
<td>8</td>
<td>275</td>
<td>265</td>
<td>275</td>
<td>265</td>
<td>276</td>
<td>265</td>
<td>275</td>
<td>265</td>
<td>276</td>
<td>265</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>8</td>
<td>694</td>
<td>121</td>
<td>696</td>
<td>121</td>
<td>696</td>
<td>121</td>
<td>664</td>
<td>126</td>
<td>667</td>
<td>126</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>8</td>
<td>351</td>
<td>212</td>
<td>347</td>
<td>215</td>
<td>355</td>
<td>210</td>
<td>300</td>
<td>249</td>
<td>300</td>
<td>249</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>8</td>
<td>743</td>
<td>130</td>
<td>742</td>
<td>130</td>
<td>743</td>
<td>130</td>
<td>701</td>
<td>138</td>
<td>701</td>
<td>138</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>8</td>
<td>159</td>
<td>1050</td>
<td>158</td>
<td>1050</td>
<td>159</td>
<td>1050</td>
<td>159</td>
<td>1050</td>
<td>158</td>
<td>1050</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>8</td>
<td>842</td>
<td>210</td>
<td>842</td>
<td>210</td>
<td>842</td>
<td>210</td>
<td>826</td>
<td>214</td>
<td>829</td>
<td>214</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>8</td>
<td>485</td>
<td>103</td>
<td>485</td>
<td>103</td>
<td>485</td>
<td>103</td>
<td>453</td>
<td>110</td>
<td>453</td>
<td>110</td>
</tr>
<tr>
<td>473.astar</td>
<td>8</td>
<td>592</td>
<td>94.9</td>
<td>591</td>
<td>95.1</td>
<td>591</td>
<td>95.0</td>
<td>592</td>
<td>94.9</td>
<td>591</td>
<td>95.1</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>8</td>
<td>287</td>
<td>192</td>
<td>289</td>
<td>191</td>
<td>288</td>
<td>192</td>
<td>287</td>
<td>192</td>
<td>289</td>
<td>191</td>
</tr>
<tr>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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 numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

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

## Platform Notes

BIOS Configuration : Data Reuse Optimization = Disabled
Sysinfo program /opt/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3 running on localhost.localdomain Mon Feb  6 08:11:53 2012

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 E5606 @ 2.13GHz
  2 "physical id"s (chips)
  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

Continued on next page
Cisco UCS C210 M2 (Intel Xeon E5606, 2.13 GHz)

SPECint_rate2006 = 175
SPECint_rate_base2006 = 166

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

Platform Notes (Continued)

siblings : 4
physical 0: cores 0 1 9 10
physical 1: cores 0 1 9 10
cache size : 8192 KB

From /proc/meminfo
MemTotal: 98997704 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)

uname -a:
Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 6 07:36

SPEC is set to: /opt/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 134G 5.5G 122G 5% /

Additional information from dmidecode:

(End of data from syslog program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/cpu2006/libs/32:/opt/cpu2006/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
Cisco Systems
Cisco UCS C210 M2 (Intel Xeon E5606, 2.13 GHz)

**SPECint_rate2006 = 175**
**SPECint_rate_base2006 = 166**

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>9019</th>
<th>Test date:</th>
<th>Jan-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor:</td>
<td>Cisco Systems</td>
<td>Hardware Availability:</td>
<td>Mar-2011</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Cisco Systems</td>
<td>Software Availability:</td>
<td>Dec-2011</td>
</tr>
</tbody>
</table>

### Base Compiler Invocation

**C benchmarks:**

```plaintext
icc  -m32
```

**C++ benchmarks:**

```plaintext
icpc  -m32
```

### Base Portability Flags

- **C benchmarks:**
  
  ```plaintext
  400.perlbench: -DSPEC_CPU_LINUX_IA32
  462.libquantum: -DSPEC_CPU_LINUX
  483.xalancbmk: -DSPEC_CPU_LINUX
  ```

- **C++ benchmarks:**
  
  ```plaintext
  -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
  -Wl,-z,muldefs -L/smartheap -lsmartheap
  ```

### Base Optimization Flags

- **C benchmarks:**
  
  ```plaintext
  -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
  ```

- **C++ benchmarks:**
  
  ```plaintext
  -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
  ```

### Base Other Flags

- **C benchmarks:**
  
  ```plaintext
  403.gcc: -Dalloca=_alloca
  ```

### Peak Compiler Invocation

- **C benchmarks (except as noted below):**
  
  ```plaintext
  icc  -m32
  ```

- **400.perlbench:**
  
  ```plaintext
  icc  -m64
  ```

- **401.bzip2:**
  
  ```plaintext
  icc  -m64
  ```

- **456.hmmer:**
  
  ```plaintext
  icc  -m64
  ```

- **458.sjeng:**
  
  ```plaintext
  icc  -m64
  ```

- **C++ benchmarks:**
  
  ```plaintext
  icpc  -m32
  ```
Cisco UCS C210 M2 (Intel Xeon E5606, 2.13 GHz)

SPECint_rate2006 = 175
SPECint_rate_base2006 = 166

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

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32 -ansi-alias
403.gcc: -xSSE4.2 -ipo -o3 -no-prec-div
429.mcf: basepeak = yes
456.hmmer: -xSSE4.2 -ipo -o3 -no-prec-div -unroll2 -auto-ilp32
458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32
462.libquantum: basepeak = yes
464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/smartheap -lsmartheap
473.astar: basepeak = yes

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/smartheap -lsmartheap

Continued on next page
Cisco Systems

Cisco UCS C210 M2 (Intel Xeon E5606, 2.13 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>
</tbody>
</table>

| SPECint_rate2006 = | 175                      |
| SPECint_rate_base2006 = | 166                    |

Test date: Jan-2012
Hardware Availability: Mar-2011
Software Availability: Dec-2011

Peak Optimization Flags (Continued)

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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.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.
Originally published on 8 March 2012.