Cisco Systems
Cisco UCS B260 M4 (Intel Xeon E7-2880 v2, 2.50 GHz)

**SPECint_rate2006 = 1110**
SPECint_rate_base2006 = 1070

<table>
<thead>
<tr>
<th>Test date:</th>
<th>Mar-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>May-2014</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Sep-2013</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>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E7-4880 v2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.10 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2500</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>30 cores, 2 chips, 15 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1.2 chip</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>37.5 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 (32 x 8 GB 2Rx4 PC3L-12800R-11, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 X 300 GB 15000 RPM SAS</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>Red Hat Enterprise Linux Server release 6.4 (Santiago)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>File System:</td>
<td>ext4</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>
Cisco Systems
Cisco UCS B260 M4 (Intel Xeon E7-2880 v2, 2.50 GHz)

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

SPECint_rate2006 = 1110
SPECint_rate_base2006 = 1070

Test date: Mar-2014
Hardware Availability: May-2014
Software Availability: Sep-2013

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>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>60</td>
<td>683</td>
<td>859</td>
<td>681</td>
<td>861</td>
<td>682</td>
<td>859</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>60</td>
<td>1020</td>
<td>567</td>
<td>1020</td>
<td>567</td>
<td>1020</td>
<td>567</td>
</tr>
<tr>
<td>403.gcc</td>
<td>60</td>
<td>596</td>
<td>811</td>
<td>596</td>
<td>811</td>
<td>594</td>
<td>813</td>
</tr>
<tr>
<td>429.mcf</td>
<td>60</td>
<td>364</td>
<td>1500</td>
<td>365</td>
<td>1500</td>
<td>365</td>
<td>1500</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>60</td>
<td>754</td>
<td>835</td>
<td>743</td>
<td>847</td>
<td>751</td>
<td>838</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>60</td>
<td>368</td>
<td>1520</td>
<td>367</td>
<td>1520</td>
<td>367</td>
<td>1530</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>60</td>
<td>881</td>
<td>824</td>
<td>878</td>
<td>827</td>
<td>876</td>
<td>829</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>60</td>
<td>167</td>
<td>7440</td>
<td>167</td>
<td>7440</td>
<td>167</td>
<td>7440</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>60</td>
<td>947</td>
<td>1400</td>
<td>914</td>
<td>1450</td>
<td>948</td>
<td>1400</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>60</td>
<td>730</td>
<td>514</td>
<td>731</td>
<td>513</td>
<td>732</td>
<td>512</td>
</tr>
<tr>
<td>473.astar</td>
<td>60</td>
<td>696</td>
<td>606</td>
<td>696</td>
<td>605</td>
<td>695</td>
<td>606</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>60</td>
<td>365</td>
<td>1130</td>
<td>366</td>
<td>1130</td>
<td>367</td>
<td>1130</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

Intel HT Technology = Enabled
CPU performance set to HPC
Power Technology set to Custom
CPU Power State C6 set to Disabled
CPU Power State C1 Enhanced set to Disabled
Memory RAS configuration set to Maximum Performance
DRAM Clock Throttling Set to Performance
Sysinfo program /opt/cpu2006-1.4/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on specompcpu Thu Mar  6 11:08:06 2014

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 E7-4880 v2 @ 2.50GHz
Continued on next page
Cisco UCS B260 M4 (Intel Xeon E7-2880 v2, 2.50 GHz)

SPECint_rate2006 = 1110
SPECint_rate_base2006 = 1070

Platform Notes (Continued)

2 "physical id"s (chips)
60 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caut ion.)
cpu cores : 15
siblings : 30
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
cache size : 38400 KB

From /proc/meminfo
MemTotal: 264101816 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

uname -a:
Linux specompcpu 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 21 14:48

SPEC is set to: /opt/cpu2006-1.4

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 275G 30G 231G 12% /

Additional information from dmidecode:
BIOS Cisco Systems, Inc. EXM4-1.2.2.1.12.012920142034 01/29/2014
Memory:
32x 8 GB
32x 0xCE00 M393B1K70QB0-YK0 8 GB 1333 MHz 2 rank
16x NO DIMM NO DIMM

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/cpu2006-1.4/libs/32:/opt/cpu2006-1.4/libs/64:/opt/cpu2006-1.4/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4
Transparent Huge Pages enabled with:

Continued on next page
Cisco Systems
Cisco UCS B260 M4 (Intel Xeon E7-2880 v2, 2.50 GHz)

| SPECint_rate2006 = 1110 |
| SPECint_rate_base2006 = 1070 |

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

Test date: Mar-2014
Hardware Availability: May-2014
Software Availability: Sep-2013

General Notes (Continued)

```
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>
```

Base Compiler Invocation

C benchmarks:
  icc  -m32

C++ benchmarks:
  icpc -m32

Base Portability Flags

| 400.perlbench: -DSPEC_CPU_LINUX_IA32 |
| 462.libquantum: -DSPEC_CPU_LINUX |
| 483.xalancbmk: -DSPEC_CPU_LINUX |

Base Optimization Flags

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

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

Base Other Flags

C benchmarks:
  403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

400.perlbench: icc -m64
## Cisco Systems

Cisco UCS B260 M4 (Intel Xeon E7-2880 v2, 2.50 GHz)

| SPECint_rate2006 | 1110 |
| SPECint_rate_base2006 | 1070 |

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

---

### Peak Compiler Invocation (Continued)

- 401.bzip2: `icc -m64`
- 456.hmmer: `icc -m64`
- 458.sjeng: `icc -m64`

C++ benchmarks:
- `icpc -m32`

---

### 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`
- 445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3`
- 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`

Continued on next page
Cisco Systems
Cisco UCS B260 M4 (Intel Xeon E7-2880 v2, 2.50 GHz)

SPECint_rate2006 = 1110
SPECint_rate_base2006 = 1070

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

Test date: Mar-2014
Hardware Availability: May-2014
Software Availability: Sep-2013

Peak Optimization Flags (Continued)

464.h264ref:
-xxSSE4.2 (pass 2)
  -prof-gen (pass 1)
  -ipo (pass 2)
-03 (pass 2)
  -no-prec-div (pass 2)
  -prof-use (pass 2)
-unroll2
  -ansi-alias

C++ benchmarks:

471.omnetpp:
-xxSSE4.2 (pass 2)
  -prof-gen (pass 1)
  -ipo (pass 2)
-03 (pass 2)
  -no-prec-div (pass 2)
  -prof-use (pass 2)
-ansi-alias
  -opt-ra-region-strategy=block
  -Wl,-z,muldefs
  -L/sh
  -lsmartheap

473.astar: basepeak = yes

483.xalanchbmk: 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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20140311.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20140311.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 6 May 2014.