# SPEC® CFP2006 Result

## Cisco Systems

Cisco UCS B200 M3 (Intel Xeon E5-2658, 2.10 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>
</tbody>
</table>

### SPECfp2006 = 68.4

### SPECfp_base2006 = 65.2

**CPU2006 license:** 9019  
**Test date:** Oct-2012  
**Hardware Availability:** Jul-2012  
**Software Availability:** Feb-2012

### Software

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Red Hat Enterprise Linux Server release 6.2 (Santiago)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler</td>
<td>C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.3.293 of Intel Fortran Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>ext4</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>CPU Name</th>
<th>Intel Xeon E5-2658</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 2.40 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2100</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>16 cores, 2 chips, 8 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>
</tbody>
</table>

### Results

- **SPECfp2006 = 68.4**
- **SPECfp_base2006 = 65.2**

---

**Continued on next page**
Cisco Systems
Cisco UCS B200 M3 (Intel Xeon E5-2658, 2.10 GHz)

SPECfp2006 = 68.4
SPECfp_base2006 = 65.2

CPU2006 license: 9019
Test sponsor: Cisco Systems
Test date: Oct-2012
Hardware Availability: Jul-2012
Tested by: Cisco Systems
Software Availability: Feb-2012

L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 X 600 GB 10000 RPM SAS
Other Hardware: None
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

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>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>36.2</td>
<td></td>
<td>36.6</td>
<td></td>
<td>36.2</td>
<td></td>
<td>36.0</td>
<td></td>
<td>35.8</td>
<td></td>
<td>36.4</td>
<td></td>
</tr>
<tr>
<td>416.gamess</td>
<td>899</td>
<td>21.8</td>
<td>898</td>
<td>21.8</td>
<td>899</td>
<td>21.8</td>
<td>777</td>
<td>25.2</td>
<td>782</td>
<td>25.0</td>
<td>776</td>
<td>25.2</td>
</tr>
<tr>
<td>433.milc</td>
<td>194</td>
<td>47.2</td>
<td>194</td>
<td>47.2</td>
<td>194</td>
<td>47.3</td>
<td>191</td>
<td>48.0</td>
<td>192</td>
<td>47.9</td>
<td>191</td>
<td>48.0</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>76.7</td>
<td></td>
<td>76.7</td>
<td></td>
<td>76.7</td>
<td></td>
<td>76.7</td>
<td></td>
<td>76.7</td>
<td></td>
<td>76.7</td>
<td></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>31.3</td>
<td>381</td>
<td>29.1</td>
<td>384</td>
<td>29.1</td>
<td>381</td>
<td>29.1</td>
<td>381</td>
<td>29.1</td>
<td>381</td>
<td>29.1</td>
<td>381</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>63.3</td>
<td></td>
<td>65.9</td>
<td></td>
<td>65.9</td>
<td></td>
<td>63.3</td>
<td></td>
<td>65.9</td>
<td></td>
<td>63.3</td>
<td></td>
</tr>
<tr>
<td>447.dealII</td>
<td>289</td>
<td>39.6</td>
<td>289</td>
<td>39.6</td>
<td>288</td>
<td>39.8</td>
<td>288</td>
<td>39.6</td>
<td>288</td>
<td>39.6</td>
<td>288</td>
<td>39.6</td>
</tr>
<tr>
<td>450.soplex</td>
<td>264</td>
<td>31.5</td>
<td>270</td>
<td>30.9</td>
<td>264</td>
<td>31.5</td>
<td>264</td>
<td>31.5</td>
<td>264</td>
<td>31.5</td>
<td>264</td>
<td>31.5</td>
</tr>
<tr>
<td>453.povray</td>
<td>173</td>
<td>30.7</td>
<td>174</td>
<td>30.6</td>
<td>173</td>
<td>30.7</td>
<td>149</td>
<td>35.7</td>
<td>147</td>
<td>36.2</td>
<td>145</td>
<td>36.7</td>
</tr>
<tr>
<td>454.calculix</td>
<td>300</td>
<td>27.5</td>
<td>301</td>
<td>27.5</td>
<td>300</td>
<td>27.5</td>
<td>279</td>
<td>29.6</td>
<td>277</td>
<td>29.8</td>
<td>278</td>
<td>29.7</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>80.2</td>
<td>132</td>
<td>79.4</td>
<td>134</td>
<td>79.8</td>
<td>133</td>
<td>63.2</td>
<td>168</td>
<td>63.8</td>
<td>166</td>
<td>63.2</td>
<td>168</td>
</tr>
<tr>
<td>465.tonto</td>
<td>376</td>
<td>26.2</td>
<td>376</td>
<td>26.2</td>
<td>376</td>
<td>26.2</td>
<td>323</td>
<td>30.5</td>
<td>323</td>
<td>30.4</td>
<td>323</td>
<td>30.5</td>
</tr>
<tr>
<td>470.lbm</td>
<td>29.0</td>
<td>473</td>
<td>29.4</td>
<td>467</td>
<td>29.2</td>
<td>470</td>
<td>29.0</td>
<td>473</td>
<td>29.4</td>
<td>467</td>
<td>29.2</td>
<td>470</td>
</tr>
<tr>
<td>481.wrf</td>
<td>156</td>
<td>71.8</td>
<td>156</td>
<td>71.4</td>
<td>156</td>
<td>71.7</td>
<td>156</td>
<td>71.8</td>
<td>156</td>
<td>71.4</td>
<td>156</td>
<td>71.7</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>392</td>
<td>49.8</td>
<td>392</td>
<td>49.8</td>
<td>390</td>
<td>50.0</td>
<td>392</td>
<td>49.8</td>
<td>392</td>
<td>49.8</td>
<td>390</td>
<td>50.0</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

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

Platform Notes

Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdf5f5032aa42e583f96b07f99d3
running on localhost.localdomain Wed Oct 17 00:35:47 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 E5-2658 0 @ 2.10GHz
Continued on next page
## SPEC CFP2006 Result

**Cisco Systems**

Cisco UCS B200 M3 (Intel Xeon E5-2658, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>68.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>65.2</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Test date:</th>
<th>Oct-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Jul-2012</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Feb-2012</td>
</tr>
</tbody>
</table>

### Platform Notes (Continued)

2 "physical id"s (chips)  
32 "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 : 8  
siblings : 16  
physical 0: cores 0 1 2 3 4 5 6 7  
physical 1: cores 0 1 2 3 4 5 6 7  
cache size : 20480 KB

From /proc/meminfo  
MemTotal: 132099952 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 Oct 17 00:33
SPEC is set to: /opt/cpu2006-1.2
```

```
Filesystem    Type    Size  Used Avail Use% Mounted on
/dev/sda1     ext4    550G   12G  510G   3% /
```

Additional information from dmidecode:

Memory:  
16x 0xCE00 M393B1K70DH0-YK0 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)

### General Notes

**Environment variables set by runspec before the start of the run:**

- KMP_AFFINITY = "granularity=fine,compact,1,0"
- LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"
- OMP_NUM_THREADS = "16"
- Intel HT Technology=enable
- Binaries compiled on a system with 2 X Intel Xeon E5-2690 CPU + 128 GB memory using RHEL 6.2
- Transparent Huge Pages enabled with:
  
```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```
Cisco Systems  
Cisco UCS B200 M3 (Intel Xeon E5-2658, 2.10 GHz)  

**SPEC CFP2006 Result**

**SPECfp2006 =**  68.4  
**SPECfp_base2006 =** 65.2

CPU2006 license: 9019  
Test sponsor: Cisco Systems  
Tested by: Cisco Systems  
Test date: Oct-2012  
Hardware Availability: Jul-2012  
Software Availability: Feb-2012

**Base Compiler Invocation**

C benchmarks:  
`icc -m64`

C++ benchmarks:  
`icpc -m64`

Fortran benchmarks:  
`ifort -m64`

Benchmarks using both Fortran and C:  
`icc -m64 ifort -m64`

**Base Portability Flags**

410.bwaves: `-DSPEC_CPU_LP64`  
416.game5s: `-DSPEC_CPU_LP64`  
433.milc: `-DSPEC_CPU_LP64`  
434.zeusmp: `-DSPEC_CPU_LP64`  
435.gromacs: `-DSPEC_CPU_LP64 -nofor_main`  
436.cactusADM: `-DSPEC_CPU_LP64 -nofor_main`  
437.leslie3d: `-DSPEC_CPU_LP64`  
444.namd: `-DSPEC_CPU_LP64`  
447.dealII: `-DSPEC_CPU_LP64`  
450.soplex: `-DSPEC_CPU_LP64`  
453.povray: `-DSPEC_CPU_LP64 -nofor_main`  
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`  
459.GemsFDTD: `-DSPEC_CPU_LP64`  
465.tonto: `-DSPEC_CPU_LP64`  
470.lbm: `-DSPEC_CPU_LP64`  
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`  
482.sphinx3: `-DSPEC_CPU_LP64`

**Base Optimization Flags**

C benchmarks:  
`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch -ansi-alias`

C++ benchmarks:  
`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:  
`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:  
`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch -ansi-alias`
Cisco Systems
Cisco UCS B200 M3 (Intel Xeon E5-2658, 2.10 GHz)

SPEC CFP2006 Result

SPECfp2006 = 68.4
SPECfp_base2006 = 65.2

CPU2006 license: 9019
Test sponsor: Cisco Systems
Test date: Oct-2012
Tested by: Cisco Systems
Hardware Availability: Jul-2012
Software Availability: Feb-2012

Peak Compiler Invocation

C benchmarks:
   icc  -m64

C++ benchmarks:
   icpc  -m64

Fortran benchmarks:
   ifort  -m64

Benchmarks using both Fortran and C:
   icc  -m64 ifort  -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
   -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
   -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:
410.bwaves: -xAVX -ipo  -O3  -no-prec-div -opt-prefetch -parallel
   -static

Continued on next page
Cisco Systems
Cisco UCS B200 M3 (Intel Xeon E5-2658, 2.10 GHz)

SPECfp2006 = 68.4
SPECfp_base2006 = 65.2

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

Test date: Oct-2012
Hardware Availability: Jul-2012
Software Availability: Feb-2012

Peak Optimization Flags (Continued)

416.gamess: -xAVX (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
           -no-prec-div (pass 2) -prof-use (pass 2) -unroll2
           -inline-level=0 -scalar-rep -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
              -no-prec-div (pass 2) -prof-use (pass 2) -unroll2
              -inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
            -no-prec-div (pass 2) -prof-use (pass 2) -inline-calloc
            -opt-malloc-options=3 -auto unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.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-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.xml

SPEC and SPECfp 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 20 November 2012.